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J. Marion Sims, M.D. (1813-1883). (Photo courtesy of New York Academy of Medicine Library.)

Female Disorders and Nineteenth-Century Medicine: The Case of Vesico-Vaginal Fistula

by Deborah Kuhn McGregor

INTRODUCTION

Prior to the twentieth century, many American and European women of various economic backgrounds experienced crippling physical disorders following childbirth. One particular such disorder, designated vesico-vaginal fistula, was common enough in the mid-nineteenth century to influence remarkably the emergence of gynecology, a heretofore unknown medical specialty.

For hundreds of years, vesico-vaginal fistula appeared as a female disorder in medical texts. From this material it is apparent that parturient women throughout much of history faced the possibility of experiencing the condition. The percentage of women so afflicted remains unknown. However, evidence exists which suggests periods of greater and lesser predominance of the condition in the nineteenth century.

There was no known medical therapy for the vaginal tears before the mid-nineteenth century, except for the use of palliatives or other minimal treatment. These efforts occasionally helped to lessen the scarcely tolerable and disgusting qualities of vesico-vaginal fistula. None, however, provided any remedy that permitted the patient to participate fully in the everyday life of a healthy woman.[1]

Vesico-vaginal fistula is and was a miserable condition typified by a continual dribble of urine into the vagina. In the days following childbirth, the victim suffered loss of vaginal tissue, leaving tears in the septum separating the vagina from the bladder. These tears occurred in any number of locations along this septum. Dr. Johann Dieffenbach's description of the quality of the patient's life appeared often in nineteenth-century medical texts throughout the western world.

> There is not a more pitiable condition than that of a woman suffering from vesico-vaginal fistula. The urine constantly flowing into the vagina, and partially retained there, and heated, runs down the labia, perineum, and over the nates and thighs, producing a most intolerable stench. . . .The husband has an aversion for his own wife; a tender mother is exiled from the circle of her own children.[2]

Although this describes a woman of the middling classes, Dieffenbach does clearly portray the isolation and misery of the vesico-vaginal fistula victim.

A young American physician, J. Marion Sims (1813-1883), perfected a surgical technique to cure the vaginal tears, rapidly rising from desperation and poverty to international renown. His success in this effort eventually won him the title of "the father of gynecology." He experimented for four years in his small Montgomery, Alabama slave hospital before successfully suturing the vaginal tears of a slave patient, Anarcha. She had endured thirty operations and had remained in Sims' hospital for the duration of the trial surgeries, from 1845 to 1849. There were, in all, eleven women patients, none of whom had anesthesia during surgery but all of whom likely received opium following the operations.[3] Many surgeons had attempted similar operations in the decades prior to Sims' experiments. He alone achieved a consistently positive result. Sims' work and that of the others brought vesico-vaginal fistula to the attention of the medical world.

There were several aspects of Sims' surgical procedure which combined to make his operation a successful one. Some were technological. Sims designed a duckbilled speculum during a time in which many physicians were loathe to observe a woman's genitals. The "Sims position" assisted visibility and thereby enhanced the possibility of seeing and suturing the fistula. Sims' patients laid on their left sides with their knees to their chests. In this position, air entered the vagina in such a way as to reveal the vaginal wall to the physician. Sims also credited his use of silver sutures (or metallic sutures) as the final ingredient which kept the wound from festering.[4] Undoubtedly of

at least equal importance was the use of Sims' sigmoid or self-retaining catheter, which kept urine away from the sutures and the fistula following surgery.

Following his successful treatment of Anarcha, Sims left the South. He suffered chronic poor health, and moved from one location to another in the hope that he might recover. Plagued by chronic diarrhea in the early 1850s, Sims' weight dropped drastically. He turned to writing up his surgical technique for curing vesico-vaginal fistula, publishing the method in a national journal, the *American Journal of the Medical Sciences*, in 1853.[5] Sims' health stabilized enough that he resolved to move himself and his wife and children to New York City to open a practice.

In 1854, leaving his wife Theresa to close the sale of Southern property, Sims moved north and began an effort to establish a charity hospital especially for the treatment of vesico-vaginal fistula and other childbirth-related disabilities. This was the first American hospital founded for the single purpose of treating female disorders. Sims arranged for the establishment of this hospital through his agent, Henri L. Stuart. He gained financial support from a group of wealthy and benevolent women who became the Lady Board of Managers. The concerted efforts created the Woman's Hospital of New York, founded in 1855. In addition to gaining the support of his benefactors, Sims won a medical following by demonstrating the surgery before an audience of talented physicians, including Dr. Valentine Mott and Dr. Alexander Stephens. The hospital won some appropriations from the state, and was chartered by the city. In addition, New York City deeded a potter's field to the endeavor as a future building site.

With the establishment of the Woman's Hospital, Sims' fortune took a decided turn for the better. As it turned out, Sims was fortunate, not only in terms of medical prestige and wealth, but also in his alliance with a young physician, Thomas Emmet. Relying especially on his acquaintance with Emmet's wife as a reference, Sims appointed Emmet to be his assistant at the Woman's Hospital. Emmet was like a son to Sims and began as an apprentice to the Sims' technique. In a few years, following Sims' departure for Europe, Emmet took over the position of consulting surgeon at the hospital. Emmet attended to many of the tasks Sims overlooked, including the meticulous recording of case histories of patients there, as well as many drawings of the tools and techniques Sims used in surgery. In addition, Emmet conducted workshops to instruct other physicians in the vesico-vaginal fistula surgical procedure.

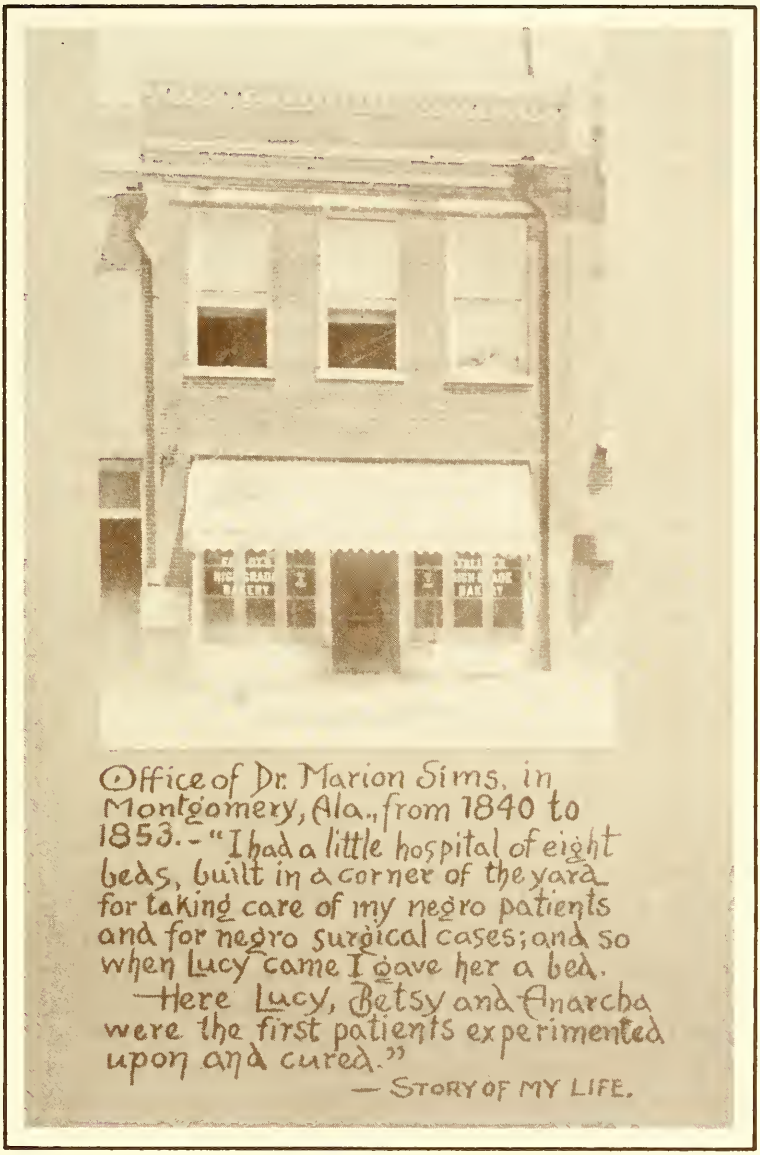
Although a Virginian by birth, Emmet was loyal above all to his Irish heritage. His uncle and father were both politically active in the Irish resistance to British rule. Emmet had a personal commitment to medical efforts to heal the Irish immigrant women who initially comprised the majority of patients at the Woman's Hospital. Only through his record keeping and publication of case histories is it possible to gain an in-depth analysis of who these patients were and how they came to suffer such debilitating tears of childbirth.

Sims' high reputation and record of medical renown aside, there remains rich evidence for the health of women, the experience of childbirth, and medical therapeutic response in the mid-nineteenth century. Today cases of vesico-vaginal fistula are rare, occurring, ironically, almost always as a result of surgery. Sims' career, on the other hand, grew out of the existence of traumatic vesico-vaginal fistula following childbirth; among slave women, Irish immigrant women and others. Although material evidence concerning the past experiences of childbirth is scarce, especially for groups such as blacks in slavery or Irish immigrants, the medical records of Sims' and Emmet's practice at the Woman's Hospital present abundant and suggestive detail. Furthermore, examining these case records suggests an explanation for the relatively common occurrence of vesico-vaginal fistula among these parturient women and the subsequent declension of the disorder.

During the nineteenth century, medical men and midwives battled for supremacy in the birthing chamber. They did not often communicate or exchange information. This conflict undoubtedly contributed to agonizing labors and poor outcomes in childbirth. A composite historical portrait of the women who suffered from vesico-vaginal fistula reveals much relative to the quality of childbirth in this uncertain period.

NINETEENTH-CENTURY LABOR, DELIVERY AND RICKETS: VESICO-VAGINAL FISTULA REASSESSED

J. Marion Sims spent relatively few years of his life operating at the Woman's Hospital of New York. In his first years there, he worked closely with Thomas Emmet. Emmet began as an apprentice surgeon, but soon assumed authority at the hospital. Not only did he frequently cover for Sims in surgery when the latter was overdue, but when Sims left the States at the beginning of the Civil War and did not return for several years, Emmet assumed charge.



J. Marion Sims' office in Montgomery, Alabama. (Photo courtesy of New York Academy of Medicine Library.)

Emmet contributed greatly to the success of Sims' surgery. Sims had invented the technique, but Emmet argued that any surgeon could perform the operation: "In truth, no more brains or tact is needed in the execution of this than in many other operations. . . ."[6] Unlike Sims, in his recorded cases Emmet paid close attention to a variety of significant factors concerning the appearance of vesico-vaginal fistula following parturition, and he valued the resultant statistical configuration. What Emmet tallied portrays the victim of the condition—the female patient who stayed at the Woman's Hospital at mid-century.

Emmet took care to document the length of labor, number of previous children, the number of required operations, and a great many other factors concerning each patient. He was rather imprecise, however, in his record of the cultural and economic backgrounds of the women. Nonetheless, Emmet was convinced that there was a link between economic deprivation and the presence of vesico-vaginal fistula: ". . . As a class, they [the patients] belonged to the poorest, had not received proper attendance, or were from the frontier or thinly-settled sections of the country; which in my experience the injury has been an exceedingly rare one among the better class."[7]

Even more specifically, Emmet reported that Irish women immigrants, feeling the effects of the famine, were often afflicted with the fistulae and came from almshouses in Ireland expressly to find relief at the Woman's Hospital.[8] Those fleeing Ireland in the years of the Famine, "more than those before or those afterward, represented the landless and the poor, who just could not remain at home."[9]

In his text of 1868 devoted to documentation of cases of vesico-vaginal fistula, Emmet described in detail seventy-three cases from the Woman's Hospital. Although he was inconsistent in reporting the ethnic origins of the women, he did set down that many of them were Irish. In 1899, Emmet recalled that "out of 200 cases, 58 percent had been immigrants, who averaged a little less than one month between the date of their arrival in the country and their admission to the Woman's Hospital."[10] Other physicians, too, reported cases of vesico-vaginal fistula among immigrants. Dr. M. Schuppert reported on several cases he operated on in New Orleans during the same period. Many of his patients were German immigrants. There were also some Irish and some blacks. Dr. Nathan Bozeman described several slave patients afflicted with vesico-vaginal fistula.[11]

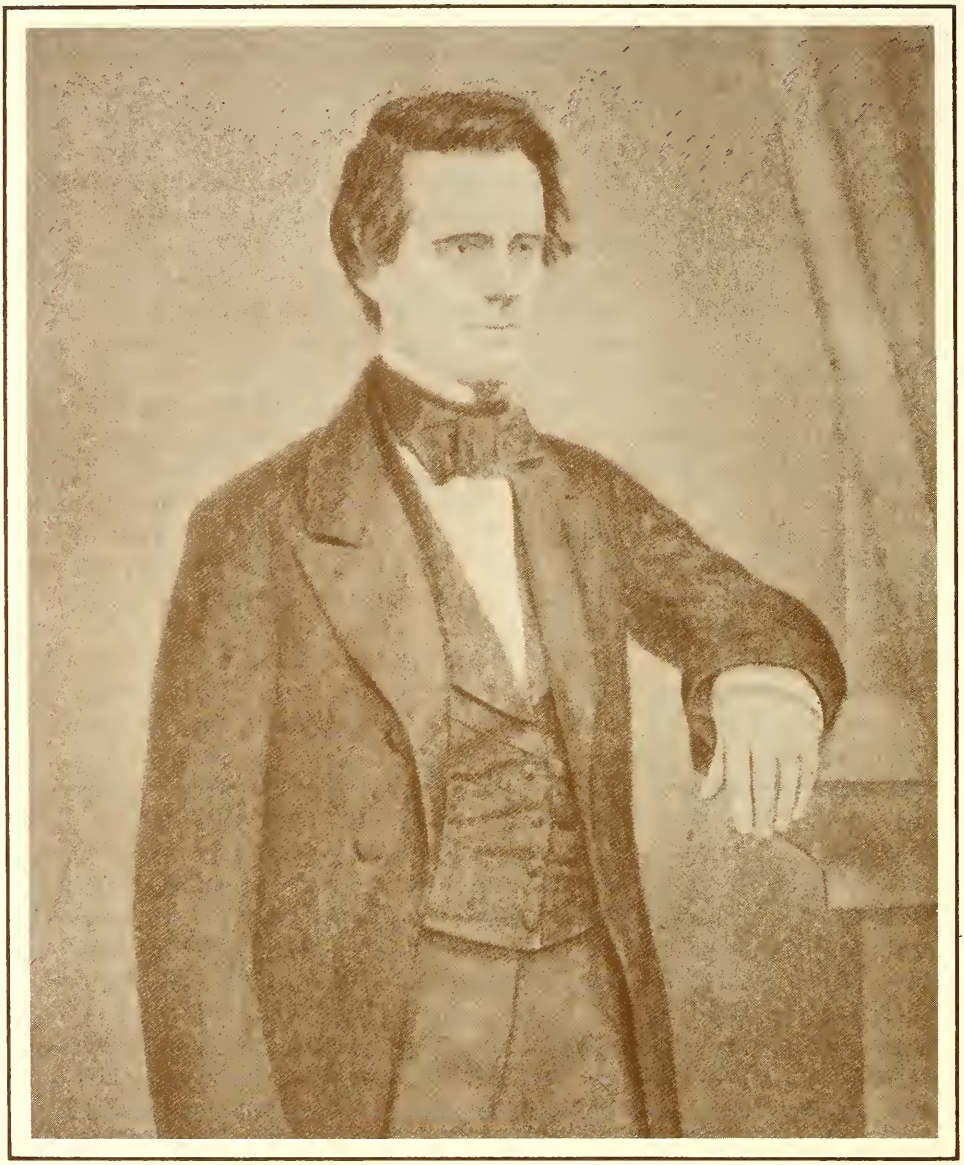
Such a record does not exclude the women of middling income from the class of vesico-vaginal fistula victim. The fact that the Woman's Hospital treated women from many states provides some evidence about these patients. In the

Memorial for the hospital, presented to the New York State Senate in 1856, patients were described as coming "not only from New York and the adjoining states, but also from Louisiana, Mississippi, Tennessee, Canada, and even from Central America."[12] These women had to have some means to travel so many miles for hospital care. Some of them undoubtedly were like the Irish women, exiled from their homes because of their miserable and untreatable physical condition.

At the same time, hospitals of this period treated almost exclusively those desperate and impoverished patients who met hospital admission standards as the "worthy poor." Those individuals who were not indigent often refused hospitalization for fear of the depressing and miserable environment.[13] The Woman's Hospital was a transitional institution, bearing both old and new qualities. It was a traditional hospital in that there was a stewardship of wealthy women, and also in that it was a charity institution. Still, the intent of the hospital was more modern, since its focus was specifically on women's diseases or disorders—heralding the specialization that is the hallmark of professionalization and modern medicine. Sims was proud of the fact that by the late 1860s, the Woman's Hospital could boast of proferring acceptable treatment for the woman who was a "respectable patient of modest means."[14] In fact, the hospital offered a sliding scale for fee payments. Women who were neither rich nor poor might arrange to pay only board and travelling fees at the hospital. In 1868, Sims explained:

> You see here a class of patients that you do not meet with in other hospitals. We have always made tolerably good provision for the wretchedly poor. But never till the Woman's Hospital was organized, had we any place where educated and cultivated women could go for relief when they had not the means to command it.[15]

By the late 1860s, however, Sims operated at the Woman's Hospital and elsewhere on several female disorders besides vesico-vaginal fistula. Women of more moderate income may have been more likely to suffer from ovarian disease or a menstrual disorder, for instance. Nonetheless, Sims did operate on several members of European royalty with vesico-vaginal fistula. Although the condition predominated among the impoverished, there were women from all situations who suffered from the tears. Indeed, as Dr. David Hayes Agnew (the founding surgeon of the Philadelphia Agnew Clinic) argued, because of the success of Sims' surgery on vesico-vaginal fistula, "if there is any class in this world, more than another, placed under unbounded obligations to cherish and respect our art [surgery], it is the mothers of the land."[16]



Sims as a young man. (Photo courtesy of New York Academy of Medicine Library.)

Motherhood, in fact, was a universal quality of the patients, with childbirth preceding the occurrence of the fistula in virtually every case recorded by Emmet. Although an undefined pathological condition intervened in the births of the women who later experienced the affliction of vesico-vaginal fistula, their case studies manifest thought-provoking details of nineteenth-century childbirth. Such descriptions demonstrate the quality of the labor and deliver for the women and the uncertainty among the medical profession regarding the best procedure during birth.

The labor of the vesico-vaginal fistula victim, the birth that followed, and the medical or lay supervision of the event all figured prominently in the outcome. Most women who suffered from the tears and tissue-sloughing associated with the condition endured extremely prolonged labors, with fistula appearing up to two or three weeks following parturition.

Outside the event of calculus in the bladder or some traumatic urinary surgery, medical practitioners agreed that prolonged labor and birth most often produced the fistula. Physicians, however, did disagree about the use of forceps. Many listed the misuse and clumsy handling of the forceps, and occasionally the tools of craniotomy, during delivery as a possible cause of vaginal damage.[17] The difficulty lay in the fact of prolonged labor itself. Without an instrumental intervention, the woman might persist in a fruitless labor until both she and the infant were dead. The surgeon, Agnew, admitted readily that vesico-vaginal fistula follow "both the legitimate and the criminal use of instruments."[18] Nonetheless, he insisted, "For my part, I know of no means so well calculated to prevent the accident as the timely employment of this instrument in skillful hands."[19]

Most likely, "skillful hands" were critically important to the success of intervening with forceps. Emmet and Sims both staunchly argued for the use of forceps. In a letter to Fordyce Barker, a surgeon at the Woman's Hospital, Sims insisted: "Instruments are often blamed for injuries which are produced, not by their use, but by the want of timely application."[20] Emmet, for his part, concurred. "I do not hesitate to make the statement that I have never met with a case of vesico-vaginal fistula, which, without doubt, could be shown to have resulted from instrumental delivery." Rather, Emmet argued that the injury was a "consequence of delay in delivery."[21]

In a publication of 1878, Emmet put forth what he considered to be his ideas concerning "the means and mode of preventing" vesico-vaginal fistula.[22] Here Emmet urged "the necessity for an early delivery," with emphasis on the intervention in labor with forceps. Significantly, however, there was animated discussion following Emmet's paper among the physicians present

(a discussion later published with the paper). Among the participants were Dr. Fordyce Barker, Dr. John Atlee of Pennsylvania (an acclaimed ovariotomist) and Dr. James White of Buffalo, New York (previously involved in the Loomis Trial). These men were unable to agree upon the proper moment of intervention in labor with forceps. Emmet himself suggested that use of forceps necessitated an "early delivery." Even in the late 1870s there was reluctance among medical men to intrude in labor and an accompanying uncertainty about the proper time at which to do so during labor. Emmet argued that the forceps should be used when the fetal head receded from the cervix. Others disagreed. Whenever the forceps might be applied, Emmet never maintained that the use of forceps would eliminate fistula altogether, only that forceps would help to prevent tears.[23]

Emmet was deeply interested in the process of labor and birth. Although he saw himself as a specialist in surgical gynecology (one of the first specialists in modern medicine), Emmet as such was uniquely knowledgeable in obstetrics.[24] The obstetrical field was distinct from the interests and activities of the early gynecologists.[25] Rarely were the individuals involved in supervising a birth the same who later mended the resultant tears. Sims, practicing earlier in the plantation South, avoided the supervision of birth. Physicians who regularly attended labor had next-to-no clinical or experimental training in birth. They regularly administered ergot and at the same time blamed it for unfortunate birth experiences. Doctors also resorted to the use of craniotomies, traction or forceps if the labor failed to progress. Many physicians were reluctant to use these tools, since the outcome of such interferences were often fatal for the infant and possibly damaging for the woman in labor.[26] Certainly poor results were likely in the instance of a craniotomy or traction when the infant had no chance of survival.

Medical practitioners couched procedural questions in terms of the use of instruments and the appropriate time and method of intervention. At the very inception of the modern medical specialty of gynecology, mid-nineteenth century physicians involved in the burgeoning field understood the process of childbirth as an essentially natural and self-propelling physiological event for women. Nonetheless, they fashioned a technique for medical intervention in childbirth which relied on the use of instruments and drugs. Denied access to the centuries-old wisdom of female midwifery, doctors in the mid-nineteenth century were not always privy to methods of assistance which would reinforce and strengthen the progress of delivery without recourse to instruments.

Thomas Emmet, a pioneer gynecologist, focused on the medical supervision of childbirth. His tone was defensive. In urging the use of forceps early in

delivery, Emmet worried that the attending physicians could be charged with malpractice—if, for instance, the use of forceps preceded the woman's losing tissue and control of urination.[27]

Just as Emmet was quick to defend the medical practitioner in the use of forceps, so he easily condemned the midwife for the misuse of ergot. Emmet, like others, including Fordyce Barker, fought to eliminate the use of ergot in speeding a labor which had slowed or stopped altogether—a prolonged labor in which dilation had ceased and the fetus no longer made headway through the birth canal—the characteristic labor of the vesico-vaginal fistula patient. Emmet claimed that the case histories of women to whom ergot was administered showed that many were attended by "irresponsible women," reaffirming his belief that the medical profession was blameless and the use of forceps a necessity.[28] Certainly, however, male medical practitioners frequently joined female midwives in the use of ergot.[29]

Emmet's line of reasoning was not above question. His statistics can be interpreted either as a defense of the use of forceps in childbirth, or as a critique thereof. More than 50 percent of the cases examined in either of Emmet's texts originated in childbirth where forceps were employed. At the same time, the length of labor was typically very long, a situation which often caused the impaction on the mother's *symphysis pubis.* Among the seventy-three births described in Emmet's text on vesico-vaginal fistula, the average length of labor was sixty-eight hours. That represented nearly three days and nights of labor. Emmet defined labor as the period beginning with the rupture of the bag of waters. Hence, the average three days and nights varied according to the intensity of contraction and did not always include the unremitting contractions known today as hard labor. In any case, such a prolonged labor argues indeed for the necessity of instrumental intervention. However, the fact that a substantial number of women experienced such intervention and still sustained the tears of vesico-vaginal fistula suggests that the use of forceps was not absolute assurance for good health following childbirth.

In his case histories, Emmet described numerous instances of greatly prolonged labors. In more than half of these cases, forceps and other instruments were utilized to end the labor. What is striking about the cases was the frequent impaction of the infant's head just at the point of birth. Several times Emmet described the infant's head as crowning, having reached the perineum, when the final strong uterine push dissipated and the child did not get born. Emmet noted the ineptitude of those managing the births. The outcome included the death of the child as well as horrendous loss of vaginal tissue for the mother.

In a labor prolonged during the second stage, the infant's head pressed upon the bony pelvic floor, cutting off all circulation to the soft vaginal tissues which covered the area.[30] This pressure ultimately caused the extensive sloughing of tissues and the tears in the bladder and the vagina. Medical professionals who described the situation disagreed about the positions of the infant's head. Sims described instances of fistula occurring after a birth in which the infant could not get past the cervix; in other words, the dilation of the cervix was insufficient to admit the passage of the infant. Others described a birth in which the infant was nearly born, but held back by the rigidity of the perineum (the perineum being the skin stretching between the vaginal opening and the anal opening). Today there are no recorded instances of an inflexible perineum obstructing birth. Episiotomies have become the solution to medical problems posed by the perineum. Although episiotomies are routine now, they were controversial in Sims' time and thus were performed infrequently.[31] Certainly the presence of the infant's head and shoulders in the vaginal tract over an extended period of time would create great damage in the woman's body, as well as injury to the infant.

Closely tied to the damage caused by the impacted head of the infant was the frequent retention of urine by a woman in labor. In the cases described by Emmet, several women endured extremely lengthy labors, for days and days, without urinating. Others were unable to urinate for several days after the birth. A bladder distended with urine represented a serious obstacle to the speedy and smooth progression of labor. According to Emmet's observations, "beyond question, in the majority of cases, a neglect to empty the bladder . . . proved an indirect cause of vesico-vaginal fistula."[32]

Emmet, however, did not publicly urge medical professionals to encourage urination during labor until the publication of his gynecology text in 1879. Even then, he described urine retention as an indirect cause. In a paper presented before the American Gynecological Association, he urged his audience to understand the blockage as a distended bladder presented in the birth canal when the fetus pushed toward delivery.[33]

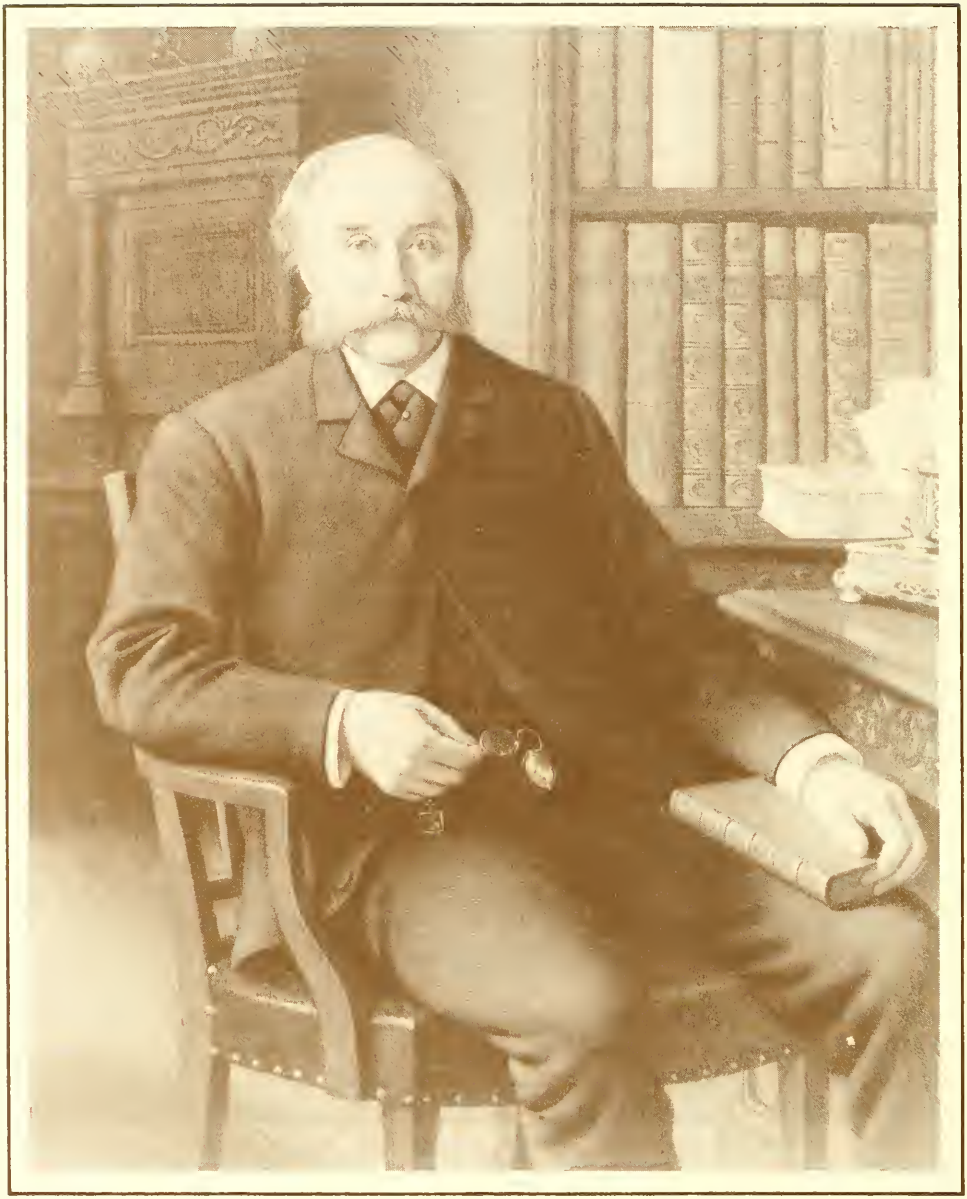
In 1880, Mary Jordan Finley, a female medical student at the Woman's Medical College of Pennsylvania, presented a doctoral thesis on vesico-vaginal fistula. The thrust of her argument was to urge the use of forceps. Like Emmet, she argued that, more often than not, physicians waited too long to apply the forceps. Finley added that the "distention of the bladder undoubtedly assists in bringing about this unfortunate result [vesico-vaginal fistula]."[34] Also in accord with Emmet, Finley saw failure to urinate during labor as of some consequence. Yet she and Emmet both focused their arguments on the great advantage in expediting labor through intervention with forceps.

Emmet did maintain, however, that the use of forceps presented a viable option in a prolonged labor, only if the bladder of the parturient woman was empty. He then advocated the use of a catheter to precede the use of forceps. Evidently, in this case the use of instruments and medical tools had pre-empted other alternatives in the medical consideration and supervision of childbirth. The answer could have been much simpler. Accoucheurs, male midwives, female midwives, and medical men alike might easily have determined the anatomically based necessity of urination during labor and prior to delivery. Whomever supervised the birth could routinely assist the woman in labor to attend to this task before the bladder became distended.

Why did some women fail so drastically to urinate during labor? This common lack suggests that women either assumed a passive role in labor or a fearful and anxious attitude during birth. They certainly distanced themselves from their own biological functioning. It is appropriate also to question the direction and guidance, if any, they received during labor. Physicians were more eager to apply a catheter than to assist women in urinating on their own. Unfortunately, the largely oral—as opposed to written—nature of the female midwives' profession prevents knowing their habits during labor. Certainly there was diversity in the practice of midwifery. Equally as certain, these women did not often use catheters to drain urine from the bladders of women in labor. Perhaps many women received little or no assistance in childbirth and experienced a high level of fear and discomfort, especially if the labor did not progress. They may have then been unable to move from bed, and even unable to relax the pelvic muscles enough to urinate. In addition, getting up out of bed, changing position and walking during labor can sometimes speed delivery.[35]

This leads to an even more penetrating and darker side of the event of childbirth preceding cases of vesico-vaginal fistula. In the cases described by Emmet in his text on the condition, at least fifty-nine of the seventy-three births were stillbirths. In his article of 1878 he quantified the number of stillbirths at 50 percent among the cases he compiled. Emmet presented his information somewhat inadvertently and haphazardly. Occasionally he failed to describe the outcome of a birth—whether the child survived or not. David Agnew reported in an article that twelve of eighteen births were stillbirths among his patients. The prevalence of stillbirths stands in stark relief for the modern reader. Though Emmet may not have considered the connection between the infant's death and the health of the mother, the connection seems certain.

Judith Walzer Leavitt has argued that medical personnel who supervised childbirth at this time had much less interest in the survival of the infant



Thomas Addis Emmet, M.D. (1828-1919). (Photo courtesy of National Library of Medicine.)

than in the survival of the mother.[36] Without a doubt, Emmet's seeming inattention to such a high rate of infant mortality in the 1860s confirms Leavitt's conclusion. What remains unclear is how the mother rebounded from the loss of a newborn, particularly when the death followed an instrumental delivery. To some degree, at least, scholars ought not to separate the health of mothers from that of their infants. The fact that 59 out of 73 of Emmet's case studies originated in the delivery of a stillborn child underscores the tie between the mother and the child.[37] Death of the child, combined with the intervention of instruments during birth, almost certainly slowed the mother's ability to recover. To a certain degree, such a devastating mortality rate might be expected from the extremely prolonged labor and lack of assistance in delivery. At the same time, the high incidence of delivery of dead infants does not explain the specific occurrence of vesico-vaginal fistula.

In addition to the lack of understanding of high infant mortality, physicians could not explain the underlying reasons for such strenuous and prolonged labor among these women (a "laborious labor," as Colombat called it[38]). Some doctors, especially Emmet, pursued an interest in the origins of vesico-vaginal fistula in labor itself. This point is exemplified in Emmet's careful and extensive collection of statistical evaluations of the patients and their birth experiences. These doctors were preoccupied with determining the proper form of medical intervention in the birth, and so their interest precluded a systematic evaluation of the health of the women themselves.

The documented bondage or poverty of many of the women afflicted with vesico-vaginal fistula suggests that something in the woman's situation hampered an easy childbirth and threatened the physical well being of both the mother and the unborn fetus. William Thompson Lusk's text, *The Science and Art of Midwifery*, which first appeared in 1881, linked vesico-vaginal fistula and the effects of rickets: "... it is impossible to study the cases of vesico-vaginal fistula reported by Emmet without arriving at the conclusion that the existence of contracted pelves is frequently overlooked."[39]

Decades before Lusk wrote, Charles Meigs mentioned rickets as causing pelvic deformities and difficulty in labor.[40] Physicians had also begun to measure the female pelvis, using such instruments as Baudeloque's pelvimeter. The art of pelvimetry provided a means by which to determine a contracted pelvis and to predict potential difficulty in childbirth. If a woman sustained a "contracted pelvis," she was much more likely to experience a prolonged and difficult labor.

Rickets occurred among the nutritionally deprived. Women who were stricken were lacking calcium in their diet. The human body cannot absorb

calcium from food without Vitamin D and magnesium. Vitamin D emanates from sunshine, as well as from food sources. Some nineteenth-century victims of rickets were children of Northern European mothers who feared the draft and refused to let them outside.

Although Lusk did not have access to twentieth-century knowledge of vitamins and nutrition, he did recognize that rickets resulted in a misshapen pelvic region which was both flat and shallow. This condition obviously contributed to difficulty in birth, especially prolonged labor. Lusk also noted that in his practice in New York City, more foreign-born patients suffered from rachitic pelves than native born.

How the composite portrayal of the vesico-vaginal fistula patient (derived from Emmet's records) correlates with demographic trends among the Irish immigrants is difficult to ascertain. Information about Irish marriage, however, and pregnancy patterns suggests a pattern of late marriage and postponed pregnancies.[41] Several of Emmet's case histories involved women bearing their first child in their late thirties. In contrast, slave women with the fistulas were often in their teen years when bearing their first children. The Irish immigrant women clearly experienced a nutritional deprivation, many having fled Ireland (in the early years of the Woman's Hospital) during the Potato Famine.

Recently, histories of the health of blacks during slavery have suggested that racial biology influenced aspects of physical well being. Rickets was common in childhood and adolescence and was especially in evidence among Southern slaves in part because blacks as a group were and are intolerant of lactose. Slaves could not digest calcium from cow's milk; even worse, milk sickened them. Nevertheless, they also were dependent on the ingestion of calcium for proper growth. Most slaveholders failed to provide an adequate diet for their slaves. With pregnancy, women slaves suffered from further calcium deficiency and faced childbirth with misshapen pelves. (Additional evidence exists in the case of modern day Ethiopia, where a hospital similar to the Woman's Hospital has been established solely for the treatment of vesico-vaginal fistula.[43])

During the nineteenth century, the number of vesico-vaginal fistula patients reached a peak near the time of Sims' death in 1883. There were a number of reasons for this increase. Probably most importantly, though, Sims' perfected surgical technique, combined with the publicity given vesico-vaginal fistula patients, made the prevalence of the condition more visible. Surgeons and physicians operated to remedy the fistulas, and recorded the surgery, or

published the fee bill. By the 1930s, however, vesico-vaginal and recto-vaginal fistula were most commonly resultant from accidents in gynecological surgery. Caesarian sections, hysterectomies and bladder stone removal, as well as surgery for cancer of the cervix all may accidentally cause vesico-vaginal fistula.[44]

In the second half of the nineteenth century, slavery ended and the peak of Irish immigration following the famine passed. These historical changes probably included alterations in diet and may have lowered morbidity from rickets. At the same time, more medical skill accompanied intervention in childbirth. All of these factors contributed to the decline in the numbers of vesico-vaginal fistula patients. Physicians at that time, however, interpreted the decline as a triumph for J. Marion Sims and surgical gynecology. The devising of a surgical closing for the fistulas coincidentally spelled an end to the condition itself.

According to some, however, the surgical triumph even then was not as perfect as it might have seemed. Both Thomas A. Emmet and Nathan Bozeman reported instances of failure of surgeries performed by Sims. Sims was not rigorous in any sense in his follow-up on the surgery. Presumably a patient might have recovered from the fistula and ceased to suffer incontinence, only to experience a subsequent pregnancy. The process of childbirth and delivery might reopen the scar tissue or somehow aggravate the vaginal tissues to create new tears. Also, a woman with a contracted pelvis would continually suffer from prolonged labor. Lusk maintained that such a woman would be more likely to suffer complications after several pregnancies. Even after the perfection of Sims' technique, repeated operations were common in the treatment of vesico-vaginal fistula. This fact suggests that completely rectifying the tears was a difficult process, and not one accompanied by guarantees of success.

Physicians in fact disagreed on the proper definition of a cure. While Sims was lax in his documentation of fistula patients, others published case histories and explored the parameters of their success. Emmet was inclined to call a case successful if there was immediate and complete improvement following surgery. In other words, fluid was injected into the bladder and the vaginal tissues (or the tissues damaged by fistula) examined for leakage. Although this procedure allowed for a measure of success, the ability of the patient to control completely her urination was a different matter. David Agnew, Nathan Bozeman, and Moritz Schuppert all reported cases in which a woman was mended by surgery but still had incomplete control of urination.[45] Agnew noted: "There sometimes follows a successful closure of the fistula a certain degree of incontinence . . . ."[46] Some suggested that time would heal the

incontinence. Others argued that gravity was an assistance. Lying down gave the woman relief. The surgery then gave the woman healthier internal tissues and a means to avoid constant saturation of urine. Women patients were often instructed in the self-application of a urinary catheter.

Emmet recalled Mary Smith as the first patient at the Woman's Hospital who never was cured. Her fistulas included damaged tissue so extensive as to obliterate the urethra, and she spent a prolonged period in the institution, working the while to assist the doctors. Sims operated on her several times, but never rectified the damaged tissue. Thirty-four operations later she still suffered from vesico-vaginal fistula. Emmet was particularly touched by her pain during surgery; "it was [performed] amid her screams from intense suffering. . . ."[47] After Mary Smith left the hospital, she became a beggar on the streets of New York City, was run down by a passing cart and killed.

Sims' former partner from Montgomery, fellow surgeon Nathan Bozeman, was strident in broadcasting what he considered to be Sims' failure in surgery for vesico-vaginal fistula. Bozeman, although competitive with Sims, attributed the discovery of silver sutures, the use of the speculum, and related techniques to Sims. He maintained, nonetheless, "that *not one half* [Bozeman's emphasis] of his individual operations before his removal to New York, were successful."[48]

Early in his publications, Bozeman described a case of a young slave who had previously been Sims' patient, and had then come to him. Sims had operated on this woman, called variously by Bozeman, "a mullatto [sic] girl, Louisa, sent to me by Mr. John Bondurant,"[49] and Lavinia Bondurant,[50] when she was very young. Originally, Bozeman reported that the first operation was at the age of nine; later he reported she was thirteen. Probably, her status as chattel made her date of birth uncertain. In any case, in 1850 Sims operated for stones in her bladder. He removed the stones through the septum which separates the vagina from the bladder, and hence created a vesico-vaginal fistula. Sims never completely closed these tears and the woman subsequently came to Bozeman seeking surgical remedy—or rather, her master brought her to the doctor. Bozeman successfully closed the tears using his button clamp, which he promoted as he described the case.

After Sims' death in 1883, Bozeman described other slave women who came to him for further treatment. Again, Sims' surgery had incompletely mended the fistulas. One of the women, Delia, was Sims' own slave when he lived in Montgomery. Sims began surgery on her fistulas in 1850 when he and Bozeman worked together to close the wounds. After ten operations, Sims performed his last operation on her, leaving Bozeman to complete the

aftertreatment. Bozeman reported that the surgery was a complete failure. Once again, he called upon his alternate technique, that of using a button suture to hold the sutures, in the place of Sims' longer clamp suture fashioned out of shot. Bozeman's outcome was fortunate.[51]

An accurate rendering of the success of late nineteenth-century vesico-vaginal fistula surgery is speculative, at best. Doctors Bozeman and Sims were particularly competitive. On the surface, they vied over techniques of closing the fistulas. Bozeman readily granted Sims precedence in successful surgery for vesico-vaginal fistula. Nonetheless, he aggressively sought a name for himself by advertising his button suture in medical journals and abroad. In fact, while Sims was busy establishing and running the Woman's Hospital in New York City, Bozeman went to Scotland, England and France demonstrating for the first time there Sims' surgical technique, with the added flourish of his own button suture. Throughout Sims' career, medical practitioners cited the achievements of Sims and Bozeman together, but in almost all references Sims was accorded the benefit of the larger contribution.

Sims did not take kindly to Bozeman's intrusions on his success. In 1858, when he was called upon to deliver the anniversary discourse before the New York Academy of Medicine, he presented his address entitled, "Silver Sutures in Surgery." One reviewer condemned Sims and the New York Academy for going against the protocol of the medical world and seizing the opportunity to elaborate at great length the profundity of his medical achievements in curing the fistulas through surgery.[52] In the speech, Sims also attacked Bozeman as a blackguard, one who had stolen his technique and claimed it as his own.

During his address, Sims proclaimed: "THERE ARE NO ACCIDENTS IN THE PROVIDENCE OF GOD."[53] Sims' allusion to the hand of God in his success with the vesico-vaginal fistula surgery is significant, because in this same address he attempted to prove empirically that his surgical technique of clamp sutures was more effective than Bozeman's button clamp. Sims rarely called upon scientific method, beyond the mechanical techniques of surgery, to further his medical remedies. Sims had what Steven Jay Gould has called a "Eureka" view of science.[54] Repeatedly he reported being struck by a bolt of tremendous insight into medical therapeutics. Most often Sims attributed these to divine inspiration.

In the case of Bozeman, however, Sims felt behooved to prove his adversary wrong. He experimented in several operations using Bozeman's technique. Obviously, Sims' objectivity was tainted with a desire to prove Bozeman

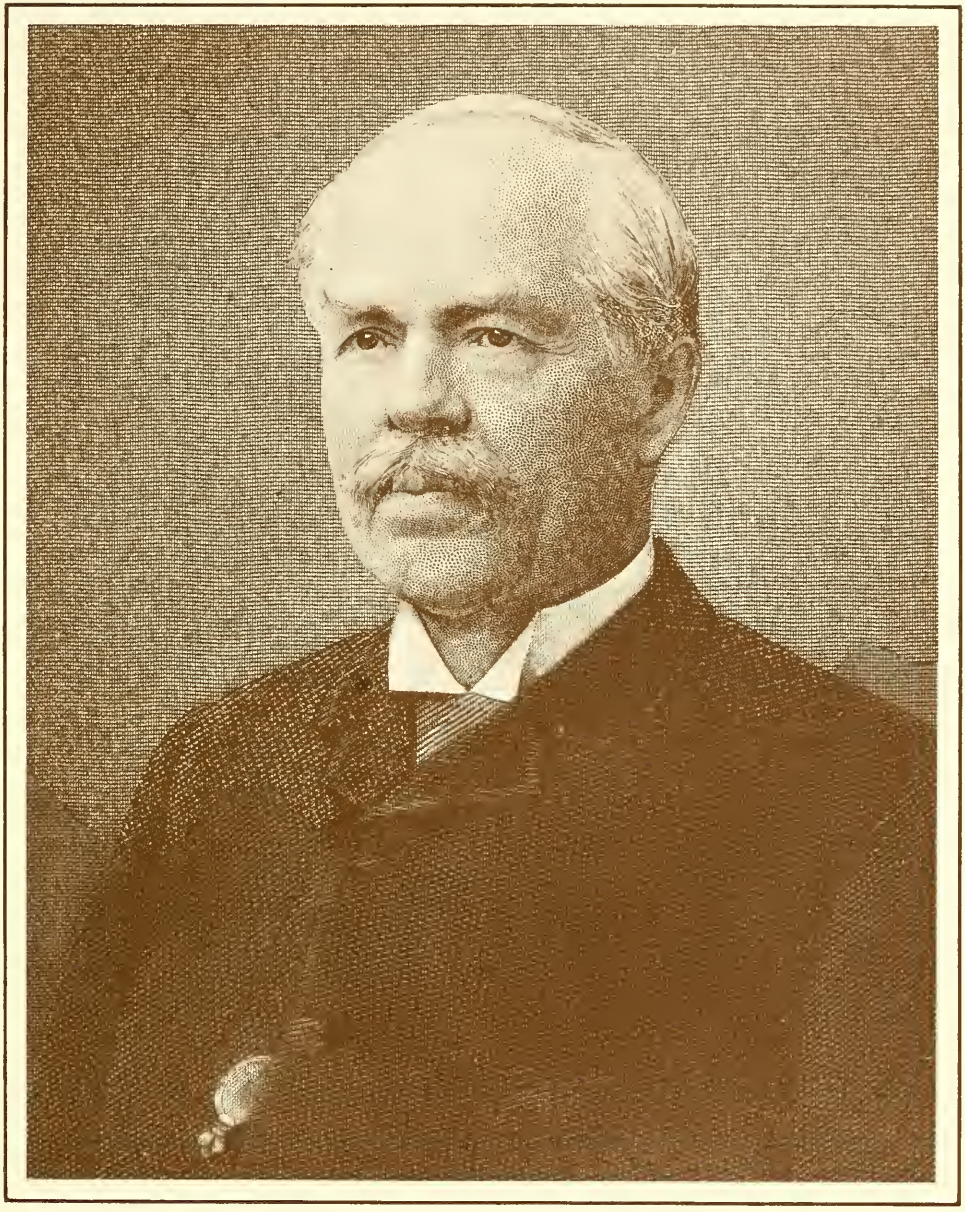
mistaken and to reaffirm the success of his own clamp suture. This Sims did. He was unable to operate with success on any fistula patient, using Bozeman's method. Thus, Sims argued fervently that his adversary's technique was a failure. Some around Sims, however, continued to feel that Bozeman was correct, at least in tempering the terms of success for vesico-vaginal fistula. Surgical textbooks routinely included Bozeman's button clamp along with Sims' surgical maneuvers. What the struggle between the two demonstrates well for us today is that at this time in medical history, perfection and excellence in surgery originated in individual dexterity and ability. Personal speed and agility were necessary prior to the widespread use of anesthesia. Interpersonal jealousies were strong because the medical profession disallowed patents of technical innovations. At the same time, men made careers out of these same tools.

In the series of operations challenging Bozeman, Sims manifested that he was willing to experiment with female bodies in the name of aggrandizing his career. Before conducting these surgeries, he had presumably ascertained and perfected the surgery for vesico-vaginal fistula to his liking. Still, Sims apparently suffered his patients through unsuccessful surgery for the sake of his disagreement with Bozeman.

J. Marion Sims never expressed an interest in the origins of vesico-vaginal fistula or in the health of the women themselves. Certainly he was loathe to see slavery as a possible cause of the condition, even though his first patients were slaves. Like Bozeman, he was loyal to the plantation economy and to the South. Bozeman argued, in fact, that women in bondage recovered more quickly than impoverished British victims of vesico-vaginal fistula.[55] It seems that for both Sims and Bozeman, loyalty to region and to way of life obviated locating slavery as the source of many vesico-vaginal fistula patients.

Unlike Emmet, Sims and many other medical professionals operated on a premise of disinterest in the etiology of vesico-vaginal fistula. They assumed that the surgical remedies of Sims constituted an end in and of themselves. Many physicians, such as the distinguished Doctor Valentine Mott, praised Sims soon after the establishment of the Woman's Hospital. Mott apparently viewed Sims' surgical innovations as engendering the gratitude of women for all time.[56]

The work of J. Marion Sims, and the assistance of Thomas Emmet, did offer surgical therapy and hope for re-entrance into society among afflicted women. For many, there seemed to be no need to look further for an understanding of vesico-vaginal fistula.



Nathan Bozeman, M.D. (Photo courtesy of National Library of Medicine.)

CONCLUSION

It is obvious that an undetermined number of women suffered excruciatingly prolonged labors in the mid-nineteenth century. Because of an accompanying high rate of stillbirths, their birth experiences were destructive physically and emotionally. Whatever the origin of their difficulty in childbirth, the result was frequently vesico-vaginal fistula (or combinations of fistulas, including recto-vaginal fistula).

In truth, failure to intervene in a prolonged labor did create many cases of vesico-vaginal fistula. In this sense, appropriate intervention with forceps might have brought an end to the appearance of the vaginal tears. Nonetheless, these difficult labors often originated in the childhood contraction of rickets by the parturient woman. Inability to urinate for hours and even for days exacerbated such abnormal labors, and further suggests a lack of guidance during labor. Finally, the very use or misuse of instruments also occasionally created fistulas.

Physicians largely ignored the etiology of vesico-vaginal fistual and thus produced a circular logic in medical therapies. Evidence indicates that an array of nutritional and childbirth practices most often created the condition. Sims, Emmet and Finley, among many others, merely urged the use of instruments during delivery to prevent the damage of vesico-vaginal fistula. Surgery, of course, provided the way to cure tears after they occurred. It appears, however, that the decline in the number of cases occurred independent of such surgical practice. Nonetheless, during the height of Sims' career, many physicians turned to surgery as the *sine qua non* for uterine and vaginal complaints, thus creating an unprecedented surge of gynecological surgery in the 1860s and '70s. Surgical procedures which followed in the wake of Sims' success included excision of the *cervis uteri* and Battey's Operation. While medical professionals gradually adopted a more conservative attitude towards gynecological surgery by the end of the century, Sims' work had laid the foundations for modern gynecology and as such maintains an important influence today.

Woman's Medical Hospital. (Photo courtesy of the Archival/Historical Collection, Bolling Medical Library, St. Luke's Hospital, New York.)

NOTES

1. Marc Colombat, *A Treatise on the Diseases and Special Hygiene of Females* (translated with additions by Charles D. Meigs) (Philadelphia: Lea E. Blanchard, 1849), and many other nineteenth century medical texts provide the history of treatment. See especially James V. Ricci, *The Development of Gynecological Surgery & Instruments* (Philadelphia: Beakston Co., 1949).

2. Johann Dieffenbach as quoted in Moritz Schuppert, *A Treatise on Vesico-Vaginal Fistua* (New Orleans: Daily Commercial Bulletin, 1866).

3. See J. Marion Sims, *The Story of My Life* H. Marion Sims, ed. (New York: D. Appleton & Co., 1886), 113. Seale Harris, in his biography of Sims, *Woman's Surgeon: The Life Story of J. Marion Sims* (New York: The MacMillian Co., 1950), also tells the tale of Sims' childhood, youth and education. He relies on an oral heritage he gained from his father, and a vast amount of research as well. See also Deborah Kuhn McGregor, "Silver Sutures: The Medical Career of J. Marion Sims," (SUNY-Binghamton, Ph.D. dissertation, 1986).

4. See C. Scott Russell, *Vesico-Vaginal Fistulas and Related Matters* (Springfield, Illinois: Charles C. Thomas, 1962); J. C. Moir, *The Vesico-Vaginal Fistua* (London: Baillier Lindall & Cassele, 1967); and J. C. Moir, "Personal Experiences in the Treatment of Vesico-Vaginal Fistula," *American Journal of Obstetrics and Gynecology* (March 1956). These publications provide information about the ongoing debates in medicine over surgical technique in treating vesico-vaginal fistula.

5. J. Marion Sims, "On the Treatment of Vesico-Vaginal Fistula," *American Journal of the Medical Sciences, 23* (January 1852) 59-87.

6. Thomas A. Emmet, *Vesico-Vaginal Fistula from Parturition & Other Causes With Cases of Recto-Vaginal Fistula* (New York: Wm. Wood & Co., 1868), 2.

7. *Ibid,* 14. For a comparison of the actual data compiled by Emmet, see Thomas Addis Emmet, "The Necessity for Early Delivery, as Demonstrated by the Analysis of One Hundred and Sixty-One Cases of Vesico-Vaginal Fistula," *Transactions of the American Gynecological Society 3* (1978), 116-117.

8. Thomas A. Emmet, "Reminiscences of the Founders of the Woman's Hospital Association," (New York: Reprint of the *American Gynecological and Obstetrical Journal,* April 1899), 18-19.

9. Husia R. Diner, *Erin's Daughters in America: Irish Immigrant Women in the Nineteenth Century* (Baltimore: Johns Hopkins Press, 1983), 31.

10. *Ibid,* 18.

11. See Moritz Schuppert, *A Treatise on Vesico-Vaginal Fistula.* Also see the many articles of Nathan Bozeman, one of the best of which is, "The Clamp Suture and the Range of its Applicability, Considered in Relation to the Cure of the Injuries Incident to Parturition," *Transactions of the American Gynecological Society 9* (1884):339-397.

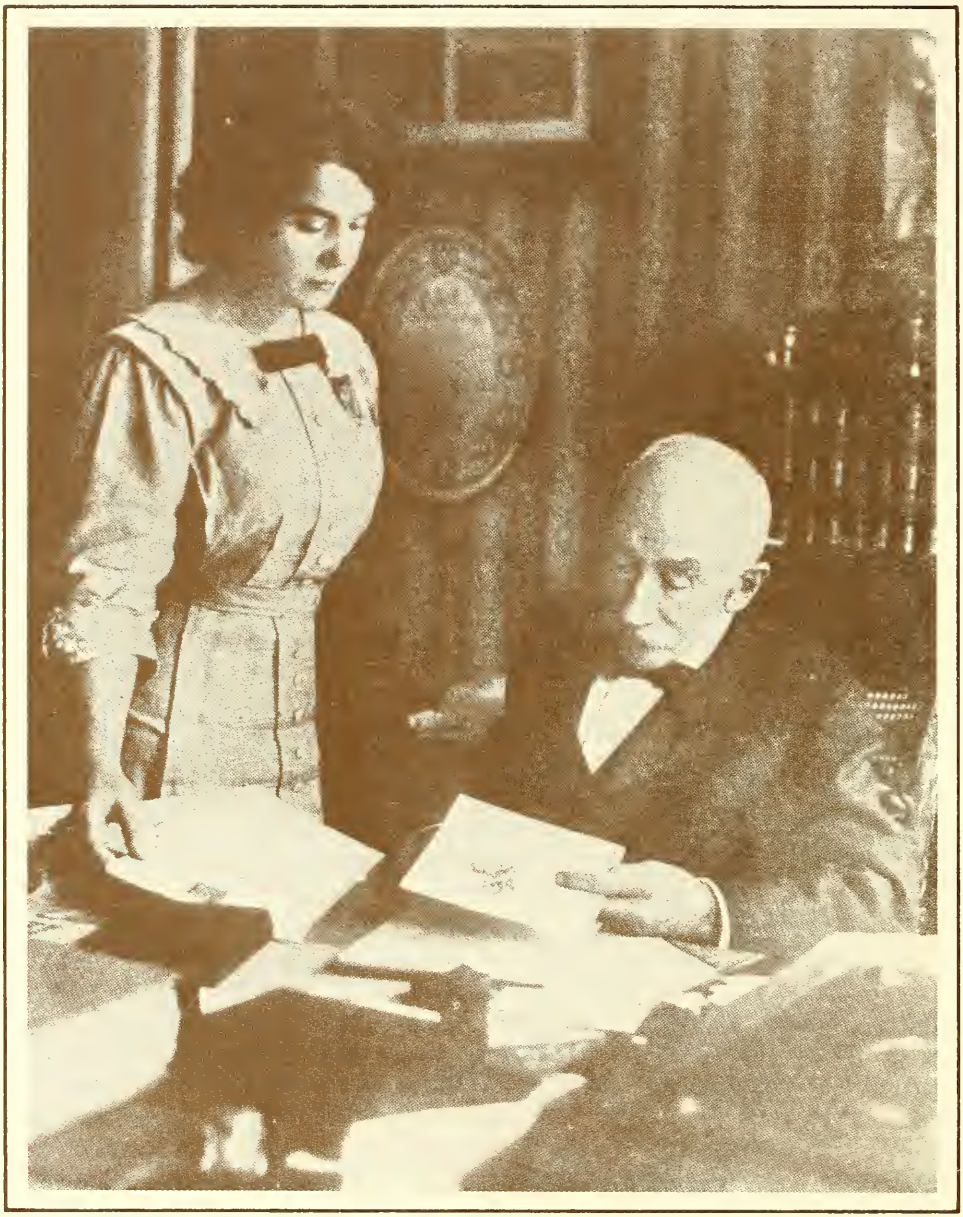
12. New York State Senate Document No. 52 (February 28, 1856) "Memorial" of the Woman's Hospital, 5.

13. See Morris J. Vogel, *The Invention of the Modern Hospital* (Chicago: The University of Chicago Press, 1980) and David Rosner, *A Once Charitable Enterprise* (New York: Cambridge University Press, 1982).

14. J. Marion Sims, "The Woman's Hospital Anniversary Address" (New York: Baker & Goodwin, 1868), 6. See Morris J. Vogel, *The Invention of the Modern Hospital* and Regina M. Morantz and Sue Zschoche, "Professionalism, Feminism, and Gender Roles: A Comparative Study of Nineteenth-Century Medical Therapeutics," *Journal of American History 67* (December 1980):568-588.

15. Sims, "The Woman's Hospital Anniversary Address," 6.

16. D. Hayes Agnew, M.D., *Lacerations of the Female Perineum and Vesico-Vaginal Fistula: Their History and Treatment* (Philadelphia: Lindsay & Blakiston, 1873), 10.



Thomas Addis Emmet, M.D., in his New York office. (Photo courtesy of National Library of Medicine.)

17. A number of pertinent volumes list direct injury and use of instruments as possibly culpable for fistulae. See Fleetwood Churchill's *On the Theory and Practice of Midwifery* (Philadelphia: Lea and Blanchard, 1848), 3rd ed., 468; Francis Rambotham's *The Principles and Practice of Obstetric Medicine and Surgery,* in reference to the Process of Parturition (Philadelphia: Blanchard & Lea, 1851), 6th ed., 183-186; J. Ashhurst's *Principles and Practice of Surgery* (Philadelphia: Lea Bros., 1893), 6th ed.; and D. Hayes Agnew, *Lacerations.*

18. D. Hayes Agnew, *Principles and Practice of Surgery* II (Philadelphia: J. B. Lippincott Co., 1881), 742.

19. *Ibid.*

20. J. Marion Sims, Letter to Fordyce Barker, *Transactions of the Medical Society of New York* (1858), 130.

21. Emmet, *The Principles and Practice of Gynecology* (Philadelphia: Henry C. Lea, 1879), 669.

22. Thomas Addis Emmet, *Incidents of My Life: Personal-Literary-Social with Services in the Cause of Ireland* (New York: G. P. Putnam, 1911), 232.

23. Thomas A. Emmet, "The Necessity for Early Delivery, as Demonstrated by the Analysis of One Hundred and Sixty-One Cases of Vesico-Vaginal Fistula," *Transactions of the American Gynecological Society 3* (1978). In a footnote to his section of vesico-vaginal fistula in *A History of Women's Bodies* (New York: Basic Books, 1982), Edward Shorter inaccurately attributes a statement concerning the absolute contribution of forceps to the end of vesico-vaginal fistula to Emmet, when in fact the statement was made by a Dr. Smith. See Emmet, "The Necessity," 124.

24. Emmet, *Incidents,* 203.

25. See Lawrence D. Longo, "Obstetrics and Gynecology," in Ronald L. Numbers, ed., *The Education of American Physicians* (Berkeley: University of California Press, 1980), 205-225, and also Irving S. Cutter and Henry R. Viets, *A Short History of Midwifery* (Philadelphia: W. B. Saunders Co., 1964) on the separation of the two areas.

26. For more on the use of obstetrical instruments, see Longo, "Obstetrics and Gynecology," Virginia Drachman, "Gynecological Instruments and Surgical Decisions at a Hospital in the Late Nineteenth-Century America,"

Journal of American Culture 3 (1980), 660-672 and Judith W. Leavitt, "Science Enters the Birthing Room: Obstetrics in America since the Eighteenth Century," *The Journal of American History 70* (September 1983), 281-304. These last two articles contain valuable information on the physicians' reluctance to intervene with forceps. See also Audrey B. Davis, *Medicine and Its Technology. An Introduction to the History of Medical Instrumentation* (Westport Greenwood Press, 1981) and Stanley J. Reiser, *Medicine and the Reign of Technology* (Cambridge: Cambridge Univ. Press, 1978).

27. Emmet, *Principles and Practice,* 669.

28. Emmet, "Necessity of Early Delivery," 118.

29. See Bert Hansen, "Medical Education in New York City in 1866-67: A Student's Notebook of Professor Budd's Lectures on Obstetrics at New York University," *New York State Journal of Medicine,* 85, Part I, August 1985, 488-498; Part II, September 1985, 548-559, for valuable information regarding the use of ergot and other interventionist techniques used by medical professionals as well as midwives. Edward Shorter, *Health of Women,* believes only midwives employed violent doses of ergot. There is ample evidence that physicians also experimented with the drug. Personal Communication, Janet Bogdan, Sixth Annual Berkshire Woman's History Conference (June 1984).

30. I am grateful to Dr. Robert D. Hilgers, Professor and Chairman, Obstetrics and Gynecology, Southern Illinois University School of Medicine, Springfield, for his clarification of the physical process of impaction of the fetal head during labor. His remarks followed my presentation at the Medical History Club of Central Illinois on April 7, 1987.

31. See, for instance, Agnew, *Lacerations.*

32. Emmet, *Principles and Practice,* 663.

33. Emmet, "Necessity of Early Delivery."

34. Mary Jordan Finley, "A Thesis on Vesico-Vaginal Fistula," Dissertation for the Doctor of Medicine (Philadelphia: Women's Medical College of Pennsylvania, 1880-1881), 12.

35. Dr. Victoria Nichols-Johnson, a gynecologist and obstetrician at Memorial Medical Center in Springfield, Illinois, described these possible

benefits of exercise during labor at a luncheon at Sangamon State University, Fall, 1986.

36. Leavitt, "Science Enters the Birthing Room."

37. Emmet, *Vesico-Vaginal Fistula.*

38. Colombat, *A Treatise,* 245.

39. Wm. Thompson Lusk, *The Science and Art of Midwifery* (New York: D. Appleton & Co., 1893), 466.

40. Charles D. Meigs, *The Philadelphia Practice of Midwifery* (James Kan Jun & Brothers, 1838).

41. See Diner, *Erin's Daughters in America* for delineation of Irish immigrant demographic trends.

42. Todd L. Savitt, *Medicine and Slavery: The Diseases and Health Care of Blacks in Antebellum Virginia* (Urbana: University of Illinois Press, 1978). See also Kenneth Kiple and Virginia King, *Another Dimension of the Black Diaspora. Diet, Disease & Racism* (Cambridge: Cambridge Univ. Press, 1981), for information on the effects of rickets. See also E. Shorter, *Women's Body,* for a thorough discussion of the disease on various pages. "Ethiopia's Fistula Hospital Offers Hope to Desperate Women," *New York Times,* Nov. 6, 1984, page C2. Thanks to Bert Hansen for showing me this article.

43. Houston Everett, M.D., & Richard Mattingly, M.D., "Vesico-vaginal Fistula," *American Journal of Obstetrics and Gynecology 72* (1956), 712-724. J. Chassar Moir, *The Vesico-Vaginal Fistula* (London: Bailliere Lindall & Cassele, 1967, 2nd ed., 1961). See Louis E. Phaneuf, "Genital Fistulas in Women," *American Journal of Surgery 64* (April 1944), 3-27, on the occurrence of surgical tears. See George Rosen, "Fees and Fee Bills: Some Economic Aspects of Medical Practice in Nineteenth Century America," *Supplements to the Bulletin of the History of Medicine #6* (Baltimore: Johns Hopkins Press, 1946) and Virginia Drachman, "Gynecological Instruments and Surgical Decision," for some sketchy evidence on the waxing and waning of the operation for vesico-vaginal fistula.

44. J. C. Moir, "Personal Experiences in the Treatment of Vesico-Vaginal Fistula," *American Journal of Obstetrics and Gynecology* (March 1956).

45. Agnew, *Lacerations,* Schuppert, *Treatise* and Nathan Bozeman,

"Urethro-Vaginal, Vesico-Vaginal and Recto-Vaginal Fistules; General Remarks," *New Orleans Medical and Surgical Review 17* (1860):42-49, 181-199, 327-357.

46. Agnew, *Lacerations,* 112-113.

47. Emmet, "Reminiscences," 5. Seale Harris, *Woman's Surgeon,* also gives details concerning Mary Smith, 162-163.

48. Nathan Bozeman, "Remarks on Vesico-Vaginal Fistule, with an Account of a New Mode of Suture, and Seven Successful Operations," *Louisville Review 1* (1856), 339.

49. Bozeman, "Urethro-Vaginal, Vesico-Vaginal," 185.

50. Bozeman, "The Clamp Suture and the Range of Its Applicability," 361.

51. *Ibid,* 362-363.

52. Review Essay, "Silver Sutures in Surgery," *North American Medico-Chirurgico Review 2* (July 1858), 635-653.

53. Sims, "Silver Sutures," 51.

54. Stephen Jay Gould, *The Panda's Thumb: More Reflections in Natural History* (New York: Norton & Co., 1980), 30.

55. Bozeman, "Urethro-Vaginal," 348.

56. Dr. Valentine Mott, *First Anniversary Woman's Hospital Report* (New York: Miller & Holman, 1856), 18.

AUTHOR

Deborah Kuhn McGregor received her Ph.D. in Women's History from the State University of New York at Binghamton in January, 1986. Her dissertation, "Silver Sutures: The Medical Career of J. Marion Sims," is a study of the physician's work and its effect on issues concerning the history of womanhood. Working with the records of the Woman's Hospital of New York City, she is presently expanding the work to create a book-length biography of Sims. The article presented here is based upon an exploratory essay initially delivered at the Berkshire Women's History Conference in June, 1984.

Professor McGregor has served on the history faculties at SUNY-Binghamton, the University of Utah, and Sangamon State University. She is interested in the general history of women, family, and childbirth, and their relationships to the practice of medicine. Her teaching and research are devoted to the exploration of the interdependency of gender relations, class, and race in the American past.

Peter Chamberlen. This seventeenth-century physician's use of the vectis in a paired application prompted him to devise what is known today as the obstetrical forceps. (Photo courtesy of the National Library of Medicine.)

An Evaluation of Some Early Obstetrical Instruments

by Dixon N. Burns
Lisa Dziabis Calache

Prior to the twentieth century, vesico-vaginal fistula occurred in women who had long and often complicated labors and delivery. This serious condition resulted from any of at least four major causes:

1) Feto-pelvic disproportion from genetic causes, pelvic bony contraction secondary to rickets, previous pelvic girdle injuries, or tuberculosis of the spine with pelvic deformity;
2) Malposition of the fetus, such as in the case of transverse lie;
3) Uterine inertia (exhaustion) from long and trying labor; or
4) Macrosomic fetus, especially among diabetics.

Knowledge of feto-pelvic disproportion from genetic causes apparently was known by some of our native Indians. Historical notes from the exploration by Lewis and Clark refer to the advice of Sacajawea, the "Bird Woman" interpreter for the Shoshone tribe, who warned against taking along any Indian women married to palefaces or half breeds. Pregnancies resulting from such unions were often associated with difficult labor and death to mother and baby because the baby was larger than the birth canal could tolerate.

Anthropological and paleopathological studies of the Mississippian culture, especially at Dickson Mounds, Illinois, have provided the startling results

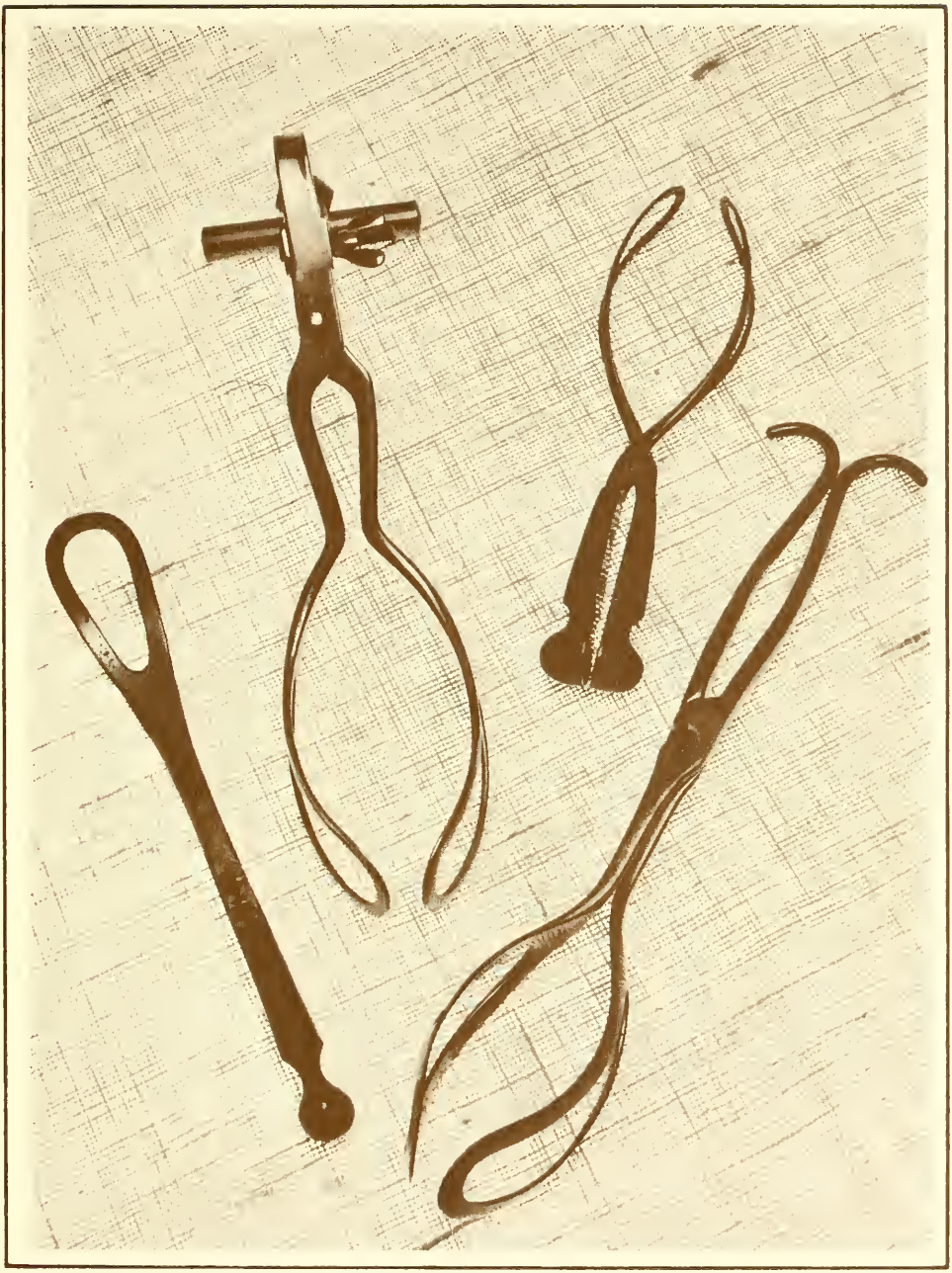
that while 14 percent of the male population died between the ages of 14 and 29, there was a death rate of 44 percent among females. Many of these deaths have been attributed to pregnancy and delivery complications based on the incidence of pelvic deformities.

Most of the fistulas referred to in Deborah McGregor's essay were secondary to tissue necrosis resulting from long obstructed labors, a condition caused from interminable pressure by the fetus on soft tissues compressed against the pelvic bones. A smaller number of fistulas resulted from tears in the tissues from irregular cranial bone fragments after the use of crushing obstetrical forceps, or soft tissue damage produced by the imprecise application or traction by forceps.

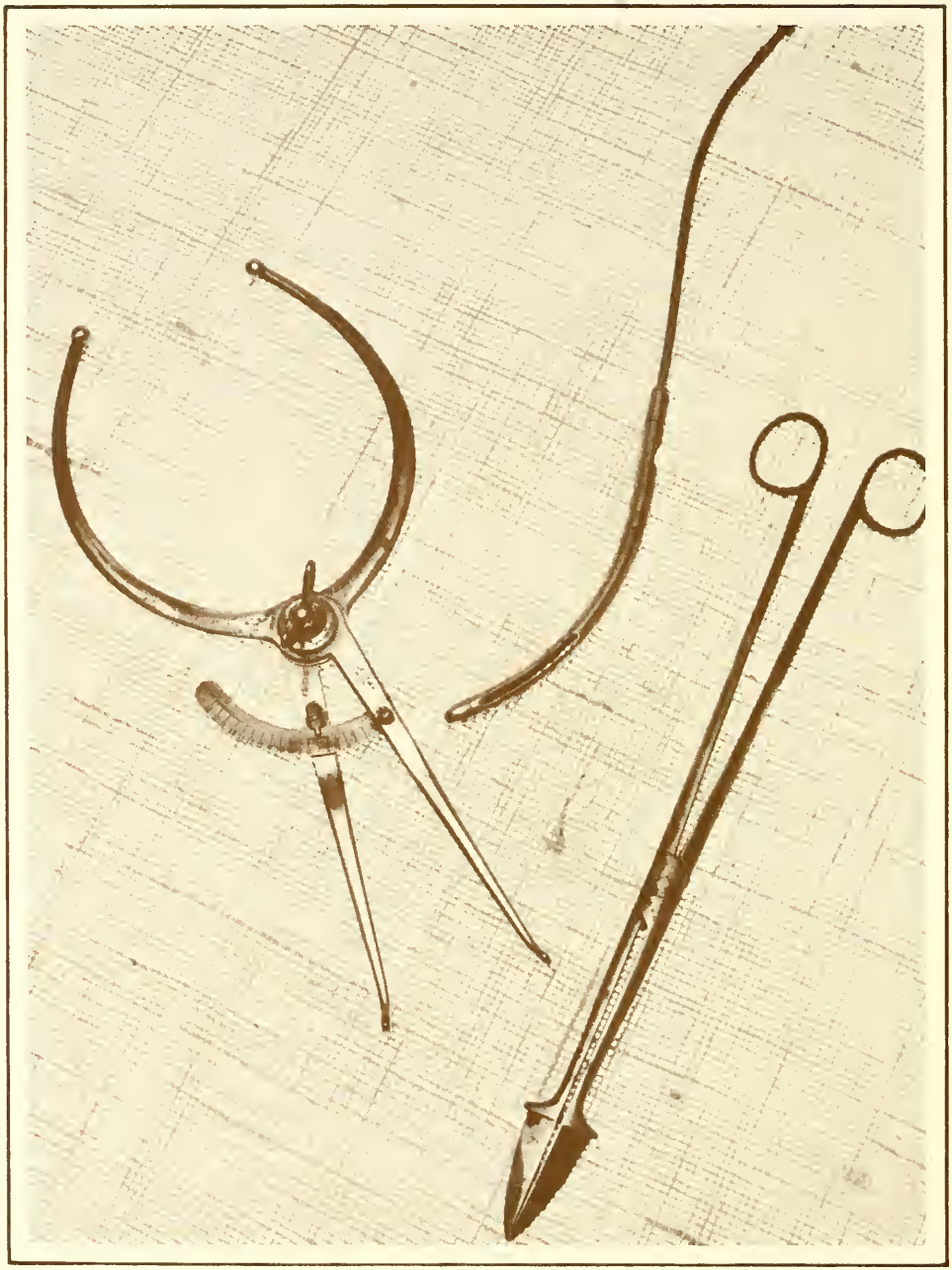
Medical education for physicians in the 1800s was brief and new graduates had little or no clinical experience. They lacked training in the use of obstetrical forceps or the performance of surgical operations, including cesarean sections.

Additionally, physicians were hindered by the fact that later scientific discoveries judged so essential to modern treatments had not yet been found: Louis Pasteur and the discovery of the bacterial cause of infection; Joseph Lister and his research on antisepsis; and William Roentgen's work with x-rays. The lack of knowledge and skill in the science of anesthesia also contributed to the plight of mothers, babies and attendants. In 1853 Dr. John Snow administered anesthesia to Queen Victoria for the delivery of Prince Leopold—an event which made anesthesia acceptable to many practitioners and their patients. Prior to the 1850s physicians had a very limited understanding of the process of birth and the anatomy of the female reproductive organs. Pelvic bony dimensions were poorly measured. Although Baudelocque described the external diameters in 1801, the internal measurements, especially the true conjugate, were not detailed until an 1851 report by Michaelis.

The medical instruments primarily used to examine women's reproductive organs and deliver their offspring included: the pelvimeter, the speculum, lever and vectis, and the obstetrical forceps. Prior to the wide use of these instruments, the hook and crotchet was commonly employed in delivery. The tri- or bi-valve speculum was used to visualize the vaginal cavity and the internal structure. This instrument was apparently known to physicians and used as early as 400 B.C. There is scant reference to the speculum, however, until practitioners resumed its use in the seventeenth century.



Obstetrical forceps. Left to right: Wallace obstetrical forceps; Thomas' short obstetrical forceps; Tarnier's axis-traction forceps; and Lowder's collapsible vectis. (Photo courtesy of The Pearson Museum collection.)



Obstetrical instruments. Left to right: pelvimeter; catheter similar to the one used by Sims; Smellie perforator. (Photo courtesy of The Pearson Museum collection.)

Obstetrical forceps in its many variations were probably developed from the lever and vectis. The lever was a flat strip of metal which was used to force out the infant's head. Historian Johannes Mulder described nearly twenty varieties of these simple levers.

The vectis, a much superior instrument, was developed in the 1600s, probably by physician Peter Chamberlen, in his attempt to help obstructed labors. Since a single vectis did not allow for successful deliveries for many patients, Chamberlen used the vectis in a paired application so as to provide more traction. When this method failed for some of his patients, Chamberlen devised an instrument which became what we recognize today as the obstetrical forceps.

Seventeenth-century researcher William Smellie devised the perforator, actually a guarded pair of scissors, which was used to facilitate delivery by reducing the size of the cranial diameter. Smellie recognized that many of his patients had contracted pelvises secondary to deformity caused by rickets. In order to determine a patient's pelvic dimensions, Smellie also developed the pelvimeter. This instrument could be used prior to labor to identify a particular patient prone to long, difficult obstructed labor and delivery. It is now known just how primitive such instruments were—external measurements of the pelvis did not always give the practitioner an accurate measure of internal proportions. Operative procedures, instruments of the period, and obstructed labor and delivery produced the debilitating injury of vesico-vaginal fistula, the cure of which laid the foundation for the specialty of gynecology. Through the insight and intelligence of physician J. Marion Sims, the concepts of employing the knee-chest position, the duck billed speculum (retractor) and the indwelling catheter to facilitate operative repair were formulated.

Other instruments were used in managing obstructed labor before the advent of the forceps. The oldest of these were hooks whose origin go back to Greek and Roman times. Although these hooks were of various types, they generally were of a destructive nature. While blunt hooks were primarily used for traction, sharp hooks were more versatile. The crochet was a sharp instrument used to extract a dead fetus. The other type was a sharp hooked knife specifically designed and constructed to compress or crush the fetus, along with providing additional traction.

Two basic techniques were used. One technique involved either crushing the skull by using an instrument called a craniotomy forceps or cephalotribe, while the other involved breaking the clavicle to facilitate delivery in breech births by using an instrument identified as a cleidoclast. (The terms

"craniotomy forceps" or "cephalotribe" are somewhat misleading, in that they imply crushing the head. In actuality the terms "cranioclast" or "craniotribe" are more appropriate for actions with this definition.)

Although improvements in the design and application of obstetrical forceps continued, the reduced incidence of vesico-vaginal fistula occurred only when a larger number of patients with obstructed labor could be delivered by cesarean section. For a variety of reasons, this operation was rarely employed in the nineteenth century. Prominent among these reasons were insufficient surgery training and an overwhelming fear of infection and blood loss.

The first reported cesarean section in this country was performed in January of 1794 in rural Virginia by Dr. Jesse Bennett, who operated successfully upon his wife. Dr. Bennett was inspired by a report from Paris where Baudelocque detailed 32 successful cesarean sections from 1750 onward. (This seemingly encouraging report was not totally optimistic because Baudelocque's series of 73 cesarean section patients showed 42 deaths.)

With the high levels of training in both the use of forceps and surgical procedures for modern physicians, vesico-vaginal fistula is rarely seen in this country. However, among the poorer populations who either do not have access to modern obstetrical or gynecological care, or who exist on inadequate diets and consequently are affected by the deformities caused by rickets, vesico-vaginal fistula can still be found.

AUTHORS

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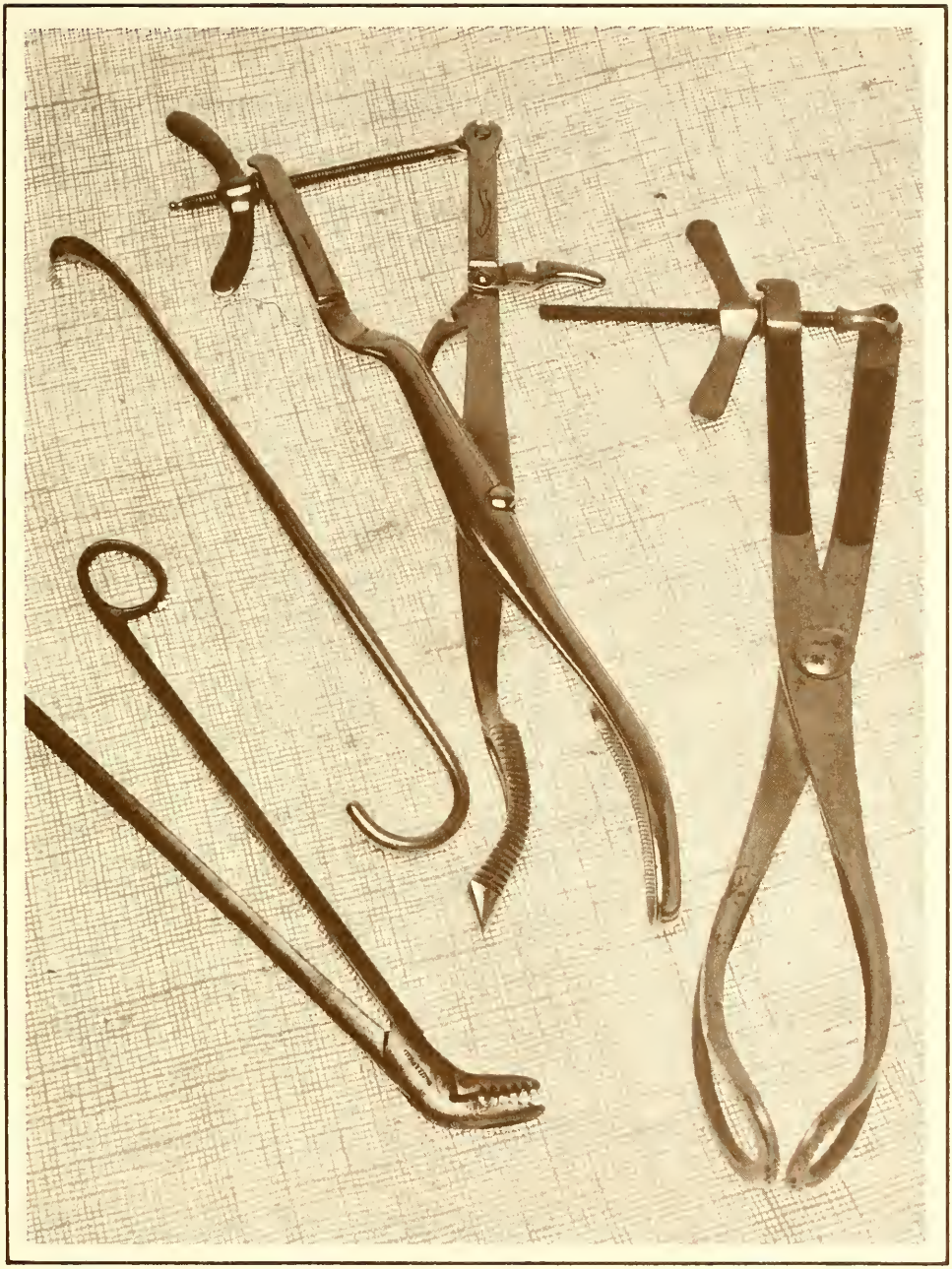
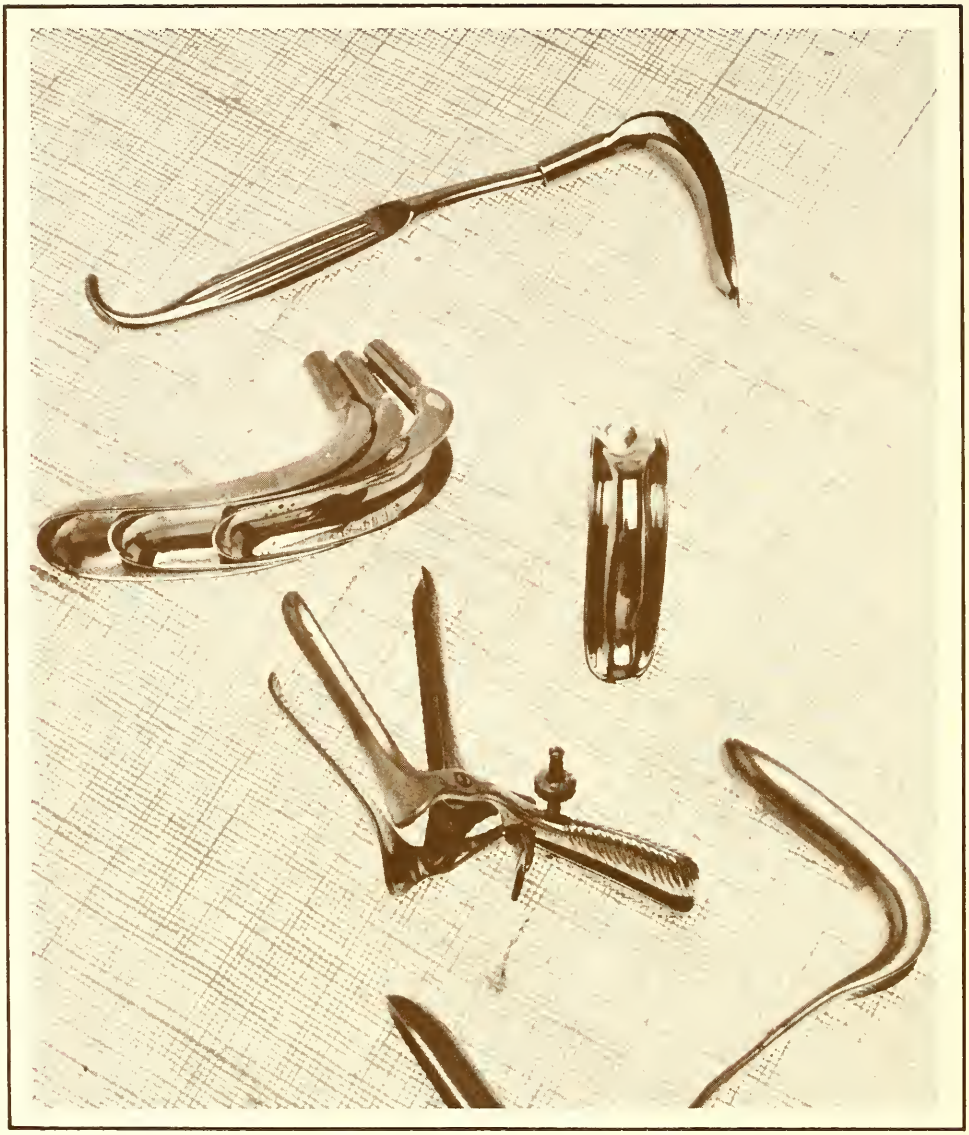
Lisa Dziabis Calache has held the position of Curator of The Pearson Museum in the Department of Medical Humanities at Southern Illinois University School of Medicine in Springfield for the past two and a half years. She has a bachelor's degree in American History from Indiana University in Bloomington.



Destructive instruments. Left to right: cleidoclast; sharp hook and crochet; cranioclasts or craniotribes—rather than craniotomy forceps or cephalotribes. (Photo courtesy of The Pearson Museum collection.)



Vaginal specula. This duck billed speculum (foreground), used in combination with the knee-chest position, aided Sims in determining the presence of vesico-vaginal fistulae. (Photo courtesy of The Pearson Museum collection.)

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EDITORIAL

Glen W. Davidson

The editors welcome you to the third volume of *Caduceus.* This volume incorporates several changes recommended by our Board of Advisors and our readers. While we will not be holding rigidly to publication of thematic issues, we do plan to focus on the following subjects in the next two years:

Laboratory Physiology
History of Dermatology
Childrens' Diseases
Spanish Influence on North American Medicine
Portrail of Healing in Amerindian Art
History of Medical Illustration
Early Museums of Pathological Material
Chinese Immigrants and Their Ways of Healing
Evidence of Prehistoric Disease

Readers are invited to submit essays for consideration as well as material for features and reviews which would be appropriate for each of these subjects. From time to time each issue will also include:

- Essays of shorter length (10-20 pages);
- Features on archival or library collections of special interest to scholars in the health sciences;
- Features about health science museums in North America;
- Reviews of exhibits;

- Personal communication (2-10 pages) about issues of opinion, particularly about the methods and ethics of archival and artifact collection;

- Reviews of publications of interest to museum curators, archivists and special collection librarians (Dittrick Museum Curator James Edmonson has agreed to serve as review editor during his term on our Board of Advisors).

Enlarged page size will permit the editors not only to include additional essays and features but also have more options for layout of illustrations. (Format of our first two volumes required largely vertical illustrations; many illustrations of historical interest exist only in horizontal format.)

We invite our readers to make suggestions for other changes which will help us satisfy reader interest in the history and anthropology of the health sciences.

The editors also are pleased to call our readers' attention to the acceptance of *Cadueus* essays for citation in *Index Medicus* and *Medline.*

Finally, I want to call our readers' attention to the Medical Museum Association (MeMA), which held its second annual meeting in Philadelphia on April 29. The conference was hosted by Gretchen Worden, Curator of the Mutter Museum and organized by Michael Harris. At the business meeting, founding president Pat Gertsner turned the gavel over to President-elect Michael Harris. The following persons were nominated and elected: James Edmonson, Vice President; Adrianne Nöe, Secretary-Treasurer; and Lisa Dziabis and Susan Cronenwett to the Council. The next meeting of MeMA will be in May of 1988 in New Orleans. Inquiries about membership should be directed to Dr. Gertsner at the Dittrick Museum in Cleveland.

McDowell House and Apothecary in Danville, Kentucky (Photo courtesy of McDowell House.)

FEATURE

McDowell House, Apothecary and Gardens

Susan Nimocks
George W. Grider

MCDOWELL HOUSE

McDowell House and Apothecary Shop is the house and doctor's shop of pioneer surgeon Ephraim McDowell. On Christmas Day, 1809, he performed the first successful operation to remove an ovarian tumor. His patient was Jane Todd Crawford. For this contribution to medicine, he is known as the "father of ovariotomy."

Ephraim McDowell was born near Lexington, Virginia, in 1771. He was five years old when the Declaration of Independence was signed. His father, Samuel, was a member of the Virginia House of Burgesses and a colonel in the Revolutionary War. When the war ended Samuel was appointed land commissioner for the Kentucky Territory and moved west to Danville with his family. Ephraim was twelve at the time.

Little is known of Ephraim's early years. However, there is documentation that when he was nineteen, he returned to eastern Virginia to become an apprentice to Dr. Alexander Humphreys. A fellow apprentice was Samuel Brown, who later became the first professor of chemistry at Transylvania University Medical School. After a two-year apprenticeship, Ephraim and Samuel went to the University of Edinburgh College of Medicine. While in Scotland, they were tutored in anatomy by Dr. John Bell. It was from Bell that Ephraim developed his ongoing interest in the study of anatomy. After a sojourn of two years in Scotland, Ephraim returned to Danville in 1794 to open his medical practice with Dr. Adam Rankin in the apothecary shop.

In 1802 McDowell married Sarah Shelby, the daughter of Kentucky's first governor, Isaac Shelby. The young couple immediately began construction of the frame portion of McDowell House, which was then attached to a brick

dwelling which had been built in the 1790s. The McDowell's new home was next door to the apothecary so he was able to be near his busy practice.

In December of 1809, McDowell was summoned to Greentown, Kentucky, to see a lady named Jane Todd Crawford. She was forty-six, married to a farmer and the mother of four small children. She thought she was expecting twins, but was not able to deliver. When McDowell examined her, he found that she was not pregnant but had an ovarian tumor. He told Mrs. Crawford that no operation had ever been performed successfully to relieve this condition. She begged McDowell to help her and he agreed that if she would come to his home in Danville, he would perform an experimental operation. Mrs. Crawford arrived in Danville on horseback in late December. The sixty-mile trip that cold winter took three days. The massive tumor rested on the horn of her side saddle.

The surgery was scheduled for Christmas Day. As was his custom, McDowell asked the townspeople to pray for his patient during Christmas church services. He also wrote out a prayer asking for God's guidance and put it in his pocket. Mrs. Crawford was put on a table in the bedroom where she had been resting from her long trip. With the help of two local physicians, McDowell removed an ovarian cyst weighing twenty-two and a half pounds. The surgery was performed without the benefit of anesthesia or knowledge of antecepsis. McDowell's records show that in five days his patient was making her bed and twenty-five days after surgery she was able to return home on horseback. Jane Crawford lived to be seventy-eight. In the meantime Dr. McDowell performed more operations to remove ovarian tumors and each time he perfected his technique. Thus, he paved the way for modern abdominal surgery.

In June of 1830 McDowell died rather suddenly of a fever and cramp colic. His death was mourned by his family, community and colleagues. He left behind his wife and five children (four others had not lived to adulthood). Mrs. McDowell moved to their farm near Danville shortly after her husband's death. McDowell House itself was sold in 1837. It had many owners before the Kentucky Medical Association finally was able to purchase it in 1935.

APOTHECARY SHOP

The McDowell Apothecary Shop was the first drug store West of the Allegheny Mountains. The apothecary was open until 1856, when the building was purchased by the Methodist Church and used as a parsonage. Later it housed a pool room, beer hall, barber shop and restaurant. The

Ephraim McDowell performing his famous operation in abdominal surgery. (This photo is a copy of an idealized painting from the description by Dr. Albin Goldsmith, one of McDowell's partners and an assistant at this operation. Photo courtesy of the National Library of Medicine.)

Apothecary Shop was also the Danville Post Office from 1799 to 1801, when Ephraim McDowell was postmaster.

The backroom of the shop served as the Doctor's office and the front room as a physician-owned apothecary shop. An apprentice to McDowell and Rankin prepared medicines for their patients. Some of these preparations were: Infusion of digitalis, or Quassia, Pectoral Balsams, Plasters, Lotions, Tinctures, Ointments, Pills and mixtures of Rhubarb and Soda, or chalk mixtures for stomach ailments. Some of these original stomach mixtures are still being used in Danville.

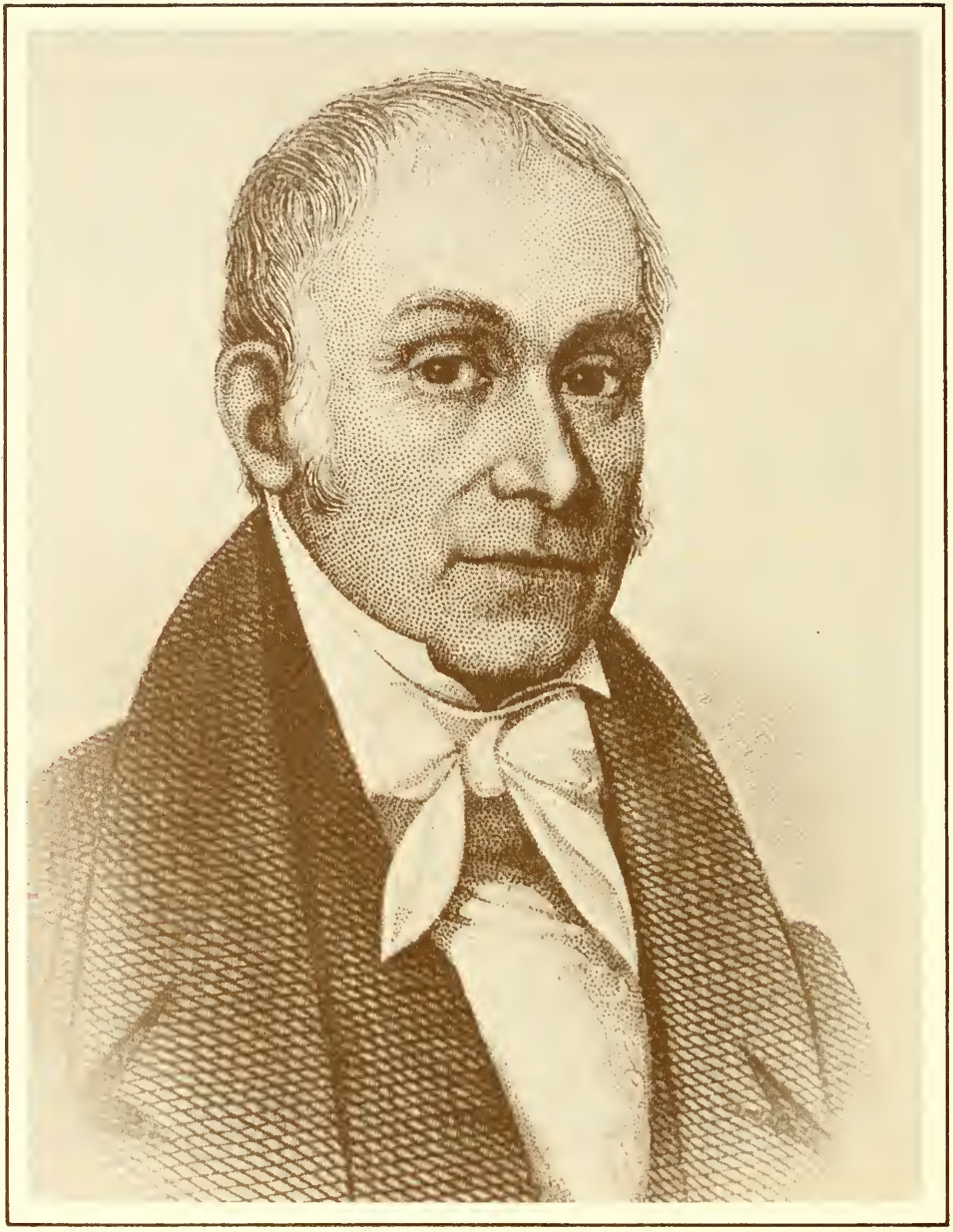
For home remedies and spices, shopkeepers sold ginger, senna leaves, catnip, lavendar, cubeb, ipecac, sarsaparilla, stramonium, opium and vegetable drugs. Patent medicines imported from England, France and Germany were also for sale. This was only twenty years after the Revolutionary War and chemists and pharmacists in Philadelphia, New York, and Boston were just beginning to prepare patent medicines in this country.

The little building which adjoins the already restored McDowell home is the property of the Kentucky State Medical Society. At its 1955 convention, the Kentucky Pharmaceutical Association took as a project the raising of $30,000 to purchase and remove the adjoining building and restore the apothecary shop. The money was furnished by Kentucky pharmacists, wholesale drug firms and drug manufacturers. The Eli Lilly Foundation contributed $20,000 to this project.

After purchasing the McDowell House, the Kentucky Medical Association deeded it to the State of Kentucky and it became a part of the chain of state parks. It was restored by the Works Progress Administration, under the direction of architects Donald Corley and Julian Oberwarth, at a cost of $35,000. The restored house was dedicated on May 20, 1939. During the early 1940s, the House was open an average of one day a year. Finally in 1947, the State of Kentucky returned the House to the KMA. At that time the KMA asked its Women's Auxiliary to furnish the House in an appropriate manner. The Colonial Dames of America furnished and maintain the operating room. The Apothecary Shop was restored in the 1950s.

The furnishings in the Apothecary Shop are very simple. A counter faces the front door, there are drawers from the floor to counter top height that contain crude drugs, chemicals, ointments, boxes and prescription equipment. Above the drawers are adjustable shelves for stock, jars of ointments, bottles of patent medicines, acids, tincture, tars, waxes and vegetable drugs. A window

Apothecary jars and ware on display. (Photo courtesy of McDowell House.)



Ephraim McDowell, 1771-1830. (Photo courtesy of McDowell House.)

on each side of the door furnishes the light and is supplimented by candle light during the long winter evenings and rainy days.

The Apothecary Shop is furnished with a collection of rare eighteenth- and nineteenth-century pharmaceutical equipment. Glassware, and ceramic jars are of the type used by Sydney Blumberg of Newton, Connecticut, a retired pharmacist and one of the largest private collectors of antique Apothecary Ware in the world. This rare collection was presented to the Apothecary Shop by Pfizer Laboratories and J.B. Roerig & Company, Divisions Chas. Pfizer & Company, Inc. The Apothecary Shop was dedicated on August 14, 1959.

The collection at McDowell consists of furniture and artifacts that predate 1830, the year Dr. McDowell died. There are McDowell family portraits by P.H. Davenport and Chester Harding. Along with the extensive collection of apothecary jars and ware are McDowell's medical instruments.

There are two gardens for visitors to enjoy, one a wildflower garden and the other a medicinal herb garden. McDowell House overlooks Constitution Square State Park, where Kentucky's first state constitution was written shortly after the Declaration of Independence.

The McDowell House is maintained today by the Kentucky Medical Association, gifts from medical societies and associations, the Friends of McDowell House Program, admissions fees and the gift shop.

The old McDowell House before restoration. (Photo courtesy of McDowell House.)

McDowell House, Apothecary and Gardens

Director: Mrs. Walter (Susan) Nimocks

Location: 125 South Second Street, Danville, Kentucky, 40422. (13 miles from Shaker Village at Pleasant Hill; 6 miles from Ft. Harrod State Park; 10 miles from Perryville Battlefield State Park).

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Rates: Adults = $2.00; Children (12 and under) = $.50. Groups (10 or more people): Adults = $1.50; children = $.50
(Reservations are required one day in advance for group rates.)
Tours last approximately 45 minutes.

Gift shop, featuring period reproductions and literature on McDowell and local history, is located in the complex.

An 1853 Report

excerpts from
Daniel Brainard

MUSEUM OF ROYAL COLLEGE OF SURGEONS

On his second trip to Europe in 1853, Daniel Brainard, M.D., founder, president and professor of surgery at Rush Medical College, Chicago, stopped in London enroute to Paris. He wrote a letter to his friend, Dr. Johnson, assistant editor of *The North-Western Medical and Surgical Journal,* describing the museum of the Royal College of Surgeons founded by John Hunter:

> . . . I was informed by the porter that the Museum was closed, and could not be seen for several days—the closing being for the purpose of transferring the specimens to the new Hall, and re-arranging them in the old. On sending my card, with a note of introduction from a member, I was, as a foreigner, readily admitted, and Mr. Quickett, the Curator, and Mr. Luke, the President, immediately met me in the Hall, and in the most obliging manner pointed out those objects of interest for which I particularly inquired. Unfortunately the disarrangement of specimens did not allow him to point out to me more than two illustrating the effects of foreign bodies placed in contact with bone, the special object of my search, and not one of a bone, the union of which after fracture had been effected by means of the seton, wires, or other foreign bodies. Disappointed in this respect, I was not so in others, the Museum being rich in all the more ordinary specimens. Hunter's experiments on the production of necrosis by separating the periosteum, is shown by numerous preparation of bones of the Ass, in as perfect a state of preservation as the day they were deposited, side by side with pieces of wood,

from parts of which the bark had been removed, where the wood, like the bone, was dead. The analogy of the periosteum and the bark was a favorite idea of Hunter.

Hunter's experiments on regeneration of tendon are perfectly shown by his preparations.

Casually, pieces of the intestines of Napoleon were pointed out, but the story that they had been demanded by the French Government, as part of the remains, was discredited.

The knife swallowed by a conjurer, and which remained in the stomach for several years, until half rusted away, without much inconvenience, when it produced death by a thrust in the side from an upset of the cart, was also seen.

The duodenum of the woman who died from swallowing bent pints, is preserved perfectly filled with them, as well as several ounces taken from the stomach and intestines, and preserved in bottles.

The collections of Sir Astley Cooper and Mr. Liston have, within a few years been added to this Museum; among the former a case of fracture of the neck of the femur, entirely within the capsule and entirely united by bone, may be noticed. This, it is said, was kept in a private collection, and never shown or alluded to by Sir Astley, although it was known to be in his possession having been presented by a friend.

Among the improvements recently introduced in the College, is a lecture room, arranged for the purpose of teaching microscopic anatomy, the first of the kind ever made use of. It consists of two benches of semi-circular form, with tables in front, upon which the microscope runs, as upon a railway. These are connected with the table of the lecturer, so that the microscope can pass from and to it. The advantages of this arrangement are, that one microscope suffices for a class, and that thirty or forty objects can thus be exhibited to a class in a single hour. This has been introduced by Mr. Quickett, the Professor of Microscopic Anatomy, who has also added to the Museum about 8,000 specimens to be viewed by the microscope. These are preserved between strips of glass with turpentine in the usual manner. The specimens preserved in fluids are placed in spirit, about five degrees above proof; the bottles are closed by placing over them first, a piece of bladder, varnished, over

that a piece of thin lead, lined with tin foil, then another piece of bladder, varnished. The cholesterine which dissolves renders the liquid slightly turbid at a low temperature, but when slightly warmed, it is perfectly transparent and unchanged by time.

The new Hall, into which the specimens are being removed in part, is of vast dimensions and beautiful proportions. It was erected principally by funds of the College, the Government appropriating but a small sum for that purpose. The library contains 30,000 volumes, conveniently arranged in a very fine Hall. It does not contain a single manuscript of Hunter, of all the numerous ones which he left at his death, but the history of their destruction or publication by a high officer of the College, as his own, has never, as yet, been more than partly given to the public. Those best informed seem to know but little of the family and personal history of Hunter. He is buried, it is said, in St. Martin's Church. He left, at his death, a son and a daughter, but whether his descendants are living, I was not able to ascertain. Such men as James Watt and John Hunter are not ennobled in England.

The governor's room contains a portrait of Hunter, by Sir Joshua Reynolds, busts of Hunter, Cline, Abernethy, Sir Astley Cooper, etc. The bust of Hunter shows his head to have been massive, very broad from ear to ear and antero-posteriorly, but proportionally, not high. Cline's is not unlike it in this respect.

The amphitheatre of the College is very handsome and spacious, capable of seating about 500 persons.

Thanks to the temporary closure of the Museum, which enabled me, instead of wandering through the Halls alone, to see the collection under the guidance of its distinguished President and the Curator, to pass an hour delightfully in interchange of views with them on professional subjects. . . .

MUSEUM OF THE SCHOOL OF MEDICINE

His visits to the museum of the Royal College and the museum of the School of Medicine in Paris heavily influenced Brainard in his ideas about medical education. The Paris to which he returned in 1854 had been through the Revolution of 1848 and the Second Republic, and beginning in 1852, was in the grip of the Second Empire of Louis Napoleon. But more than the changes

of political revolution caught Brainard's attention. Hospital medicine was being replaced by laboratory research. The museums not only provided vivid contrasts between the two approaches of medical practice but demonstrated the use of artifacts for teaching the new philosophies and techniques of laboratory medicine.

In his letter to Dr. Johnson, dated February 13, 1854, Brainard described the changes in French medicine:

> . . . To the stranger who was familiar with the Institutions in 1840, it does not appear, on a return at present, that much progress has been made, either in the means of teaching the doctrines taught, or the qualifications of the Professors. The Museum of the School of Medicine, comprising healthy and comparative anatomy, specimens of *materia medica*, surgical instruments, etc., has been principally created since that period, and although not large for a national collection, is a precious addition to the means of instruction, and contains many preparations of the nervous and lymphatic systems of unequalled beauty. This collection is due to Orfila, whose name it bears. In addition to this, a new museum has been collected at the dissecting amphitheatre of Clamart, which contains some valuable pieces, but its situation, and the rules in regard to entrance, render it useless for the purposes of instruction. None of the hospitals have collections except that of Val-de-Grace, and most of the valuable specimens which might be derived from them, are lost for want of care. The Musee Dupuytran have [sic] received considerable additions, but at the present time is inferior in every department except that of bones, which is very perfect. . . .
>
> . . . Among the most notable defects of French teaching may be noticed the neglect of general pathology and the use of the microscope. Robin is nearly the only teacher of the microscope, and his class is generally confined to a small number of American students. Nachet, one of the principal manufacturers of microscopes, told me that his best customers were from America, and that nearly all of his most expensive instruments were sent there. The manufacturers of anatomical models of papier mache, plaster and wax, the preparers of skeletons and specimens of natural history, and the instrument makers, all assured me that their best customers are Americans or English. . . .

These excerpts of Dr. Brainard's letters are from *Saga of a Surgeon: The Life of Daniel Brainard, M.D.*, by Janet Kinney, M.D.

Saga of a Surgeon:
The Life of Daniel Brainard, M.D.

by Janet Kinney, M.D.

Daniel Brainard was one of America's premier pioneer surgeons and the founder of Rush Medical College in Chicago. Dr. Kinney has examined primary documents to weave the fascinating story of a young man from upstate New York acquiring a medical degree, establishing a practice in Chicago's early years, and learning from the medical giants in Europe in order to bring scientific medicine to American medical education.

Included in the three appendixes are four of Brainard's most important essays and an extensive bibliography of his writings. Historical photographs and an index are also included.

Dr. Kinney is professor emerita of Internal Medicine at Rush University/Rush Presbyterian-St. Luke's Medical Center in Chicago.

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